

NEWSLETTER No. 3, January 2006

Dear SSEF Alumni member

I would like to begin by thanking all of you for helping to support SSEF Alumni, we are young and growing and we rely on your attendance to carry on!

We were honoured to have Peter Groeneboom with us who came all the way from Holland for our last lecture held by Alexander Leuenberger.

Last year was an interesting beginning for SSEF Alumni. We experienced a couple of stimulating meetings and a great outing into the mountains combined with a visit to the power plant "Grimselfpower" and including the spectacular Aare Gorge. This year has only begun and we have some exciting events to look forward to, the first being held on the 20th March – please consult the newsletter for detailed information.

Further, I would like to suggest that we meet at certain intervals at Resturant Falcone for a chat and a drink and I propose we will start this on Monday 6th February at 19.30. This will give us the opportunity to get to know each other a little better and find a platform for exchanging business interrests and ideas. I would be very appreciative of a feedback concerning this idea. We from SSEF Alumni would also be happy to receive any inputs concerning our organisation and events. I cannot emphasise enough that your comments are very important to us.

On this note I wish you a FABULOUS 2006, may it bring you all good health, happiness and success.

Leon

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SSEF Alumni Events:**Past SSEF Alumni Gem Lectures were a huge success**

Last September, SSEF Alumni started its Gem Lectures in Zurich with a presentation by George Bosshart about the Jade Road (From Burma's mines to China's Jade Markets). He showed us many exciting photos which he and his wife Anne Bosshart had taken during their recent trips to Burma (Myanmar) and China. Especially moving was the short video clip showing the elephant pulling out the car from a muddy road in Burma. About 30 people were participating at that event and the small room in the restaurant was more than packed.

In December, Alexander Leuenberger gave a talk about gemstones in Madagascar. Starting with his experiences in mining rose quartz and rock crystal deposits, he finally gave a lot of insider information about his own mine for fancy coloured sapphires. At the end of the talk, many questions were asked about mining and buying of gemstones in Madagascar, so that everybody could really gain first hand information by an expert. This time, we met in a much larger room, so the participants could enjoy a fine dinner together at the end of the "Show" in a very relaxed atmosphere.



George Bosshart presenting his lecture about the Jade Road.

© M.S. Krzemnicki, SSEF 2005

SSEF Alumni would like to thank both, George Bosshart and Alexander Leuenberger for their interesting presentations. As the SSEF Alumni lectures were such a success, we will continue these lectures in 2006 and start with a very exciting event in March 2006 (see below).

PS: Since December 2005 we have to charge a 10.- SFr entry fee for all participants of lectures to cover the costs (or part of it) to rent the room. Thank you for your understanding.

Whenever you know somebody who might be interested to come to a SSEF Alumni lecture, please invite him or her and inform Leon Ascot info@ssef-alumni.org as soon as possible that you will bring along a friend.

**Next SSEF Alumni Gem Lecture****From the Blue Diamond of Jean-Baptiste Tavernier to the Hope Diamond: Myth and Reality**

by Michael Hügi,
SGG gemmologist and SSEF Alumni member

Monday, 20th March, at 7 pm, Restaurant Falcone in Zurich (10.- SFr. Entry fee)



© Smithsonian Institute, USA

The blue Hope diamond is the most famous and the largest blue diamond in the world. It is one of the main attractions of the Smithsonian Institute in Washington D.C. As so many different people - jewellers, kings, actors, tycoons and thieves - were in possession of this extraordinary stone, it is not astonishing that the history of this stone has been added with legends, superstition and lies.

In his lecture, Michael Hügi will present us the newest findings on the history of this stone,

starting from the blue diamond of J.B. Tavernier, to the diamond of the French Crown until the blue Hope diamond of today. By combining historical descriptions of the diamond with computer modelling of its cutting, the various stages and shapes of this extraordinary diamond during the times will be shown. Furtheron, we will get information on the historical background, i.e. the ancient Indian diamond mines and the diamond trade in the 17th century. A special focus will be on Jean Baptiste Tavernier, diamond merchant and first owner of the blue diamond, who was quite an outstanding personality at the time.

Please contact Leon Ascot at info@ssef-alumni.org if you are interested to participate at this lecture. The location is again at the Restaurant Falcone, Birmensdorferstrasse 150, 8003 Zurich. After the lecture, we will enjoy a relaxing dinner together with Michael Hügi at the restaurant.

*Cover of a german translation of the book of J.B. Tavernier
© M. Hügi, 2006*



AGA Conference, at the Tucson Show, USA

Wednesday, February 1, 2006

Marriott University Park, 880 East 2nd Street, Tucson, Arizona, USA

by Antoinette Matlins, Gemstone Press, USA

Classic Gemmology at Work in a Changing World

The world of gemstones has changed dramatically over the past few decades. In addition to new sources of material, there are also more treatments being used routinely, to enhance an ever-increasing number of gemstones, including diamonds. There will be two morning sessions on coloured gemstones, "Characteristics of Treated and Untreated Gemstones" and "Indicators of Origin."

The first afternoon session will be "**LIBS Technology in the Field of Gemmology**" and will provide an update on beryllium/elemental diffusion of corundum and the value of LIBS technology in the gemmological field. The remainder of the conference will focus on diamonds. "Diamonds: New Laser Techniques, The Latest in CVD Synthetic Diamonds, New Grading Challenges." Presentations on coloured gemstones will be given by John Koivula (AGTA Gem Testing Center), **Dr. Michael Krzemnicki** (SSEF Swiss Gemmological Institute), and Shane McClure (GIA Gem Trade Lab); the sessions on diamonds will be given by Nick Del Re (EGL-USA), and C.R. Beesley (American Gemological Laboratories).

Each presentation will be followed by the opportunity to view stones using a variety of instruments, with personal guidance from the presenters. As part of the AGA's commitment to keeping members up to date on the latest in gemmological equipment, the Gemmological Institute of America (GIA) will be providing instruments for use during the conference, and the Swiss Gemmological Institute will be setting up and demonstrating the proper use of LIBS in the gemmological laboratory.

For more information and registration:

<http://accreditedgemologists.org/subpages/2006Tucson/>

for a detailed Conference program:

<http://accreditedgemologists.org/subpages/2006Tucson/conf-program.pdf>

The Visit at the famous Crystal Cavern at the Grimsel in the Swiss Alps in October 2005

by Leon Ascot

Towards the end of summer a small group of SSEF Alumni members ventured into the mountains to visit the Grimsel Electricity Works (KWO Grimselstrom) as well as the crystal exhibition within the plant. Our excursion also included a walk through the breathtaking Aare Gorge located nearby.



© H.A. Hänni, SSEF

The warm welcome we received upon arrival was more than we had expected and the weather was just magnificent for this first SSEF Alumni excursion bearing in mind that only a week prior the whole area had been covered under snow. Oh we were lucky!!!



Delia and Doris at the mineral exhibition.
© L. Ascot, 2005



From left; Doris, Delia, Régine, Alice, Cross the dog, Sonja and Mrs Weissenthal our guide. © L. Ascot, 2005

As we drove our cars into the mountain I was not quite sure what to expect, it was a strange feeling to literally drive "into" a mountain! Inside it was pleasantly warm and very clean with fresh air being constantly pumped into the heart of the works. Whilst we were shown about it became clear to us that we were standing directly under the lake with just a couple of hundred meters of rock separating us from the lake bed. Our guide explained with much enthusiasm the design and function of this incredible power plant, guiding us all the way and gladly answering all our questions. After our tour of the plant we were then taken to the crystal cavern, which is definitely worth looking at. There was also an exhibition of beautifully cut and sculptured stones by various artists.

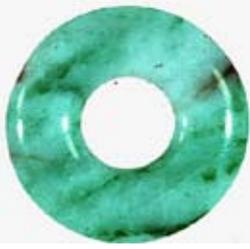
The Aare Gorge was a wonderful way to end the day, the path weaves its way through the Gorge like a snake, with tunnels and openings leading to magnificent pools of water and interesting rock formations. The sound of the gushing river was our constant companion as we walked behind rocks and inside tunnels, and as we came back into the light of day we were confronted with these beautiful sights and sounds, the air too has a special fragrance. This Gorge is a must for anybody who likes to be adventurous but keeping on the safe side of things.

So till next time.....

First SSEF Alumni excursion will be repeated again in 2006

We will organise this excursion again in 2006, if some SSEF Alumni members are interested. So far the date is not fixed, but it will be in May or June 2006. Please contact Leon Ascot at info@ssef-alumni.org, if you are interested to participate at the next Grimsel crystal cavern excursion.

Gemmological Articles and Notes:



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The Changing Face of Jade

Tay Thyé Sun, Far East Gemological Laboratory, Singapore

Introduction

Jade, the stone of eternity, has been sought for its beauty, toughness and rarity by Oriental, European and Latin American civilisations. The Chinese named this gemstone Yu, the West would call it jade (Webster, 1983). The English word for jade is derived from the Spanish term piedra de ijada that means ‘hip stone’. When translated from Spanish to French, term piedra de ijada was misprinted as pierre le jade and became the source of English word jade. In 1780, the jade that the Spanish brought back from Mesoamerican was identified and named nephrite by the German geologist A.G. Werner. During the 13th century, a new vivid green mineral of greater toughness was discovered in Burma (now Myanmar). The Chinese named this new mineral Fei-ts’ui (not jade) and in 1863 the French mineralogist Alexis Damour named it jadeite.

In fact, nephrite was once the ‘king of stone’ among the Chinese but when jadeite was introduced into China, the vivid and tough green rock became an instant hit with the Emperor and Empress. The rest is now history. But the last twenty years, the history of jadeite-jade or jade has been dented somewhat by some jade manufacturers who had perfected the technique of improving the quality and making it desirable for the masses. For better or worse, any serious gemmologists and jewellers who were dealing in jade should exercise caution and any sign of inconsistency in appearance of jade during identification should be put aside for further high tech identification. Many a time, the natural jade dealers dissociate themselves from manufacturers who buy and sell treated jade material. The constant changing faces of new treatment on jade is what most city dwellers have to look out for if they are keen to buy and keep a piece of the ‘stone of heaven’ for their family heirloom.

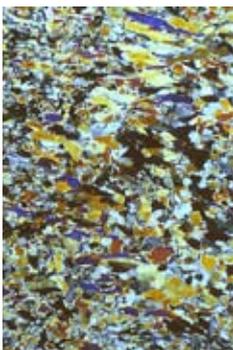


Fig. 1. Thin section under crossed-polar of a natural untreated jadeite jade (50x).
© H.A. Hänni, SSEF

The Changing Face

Commercial value enhancement of jadeite began in earnest the mid-1980’s, as a consequence of the discovery of large quantities of low quality jadeite in Myanmar during 1983. This jade, which was described as 83-jade is composed mainly of jadeite together with some pyroxene and amphibole (Guo Ying & Pan Zhaolu, 1997). However, it became necessary to treat this jadeite in order to improve its quality. In response to the appearance of many varieties of treated jadeite, jade dealers in Hong Kong began to use the terms A-jade, B-jade, C-jade and B+C-jade, to reveal the type of treatment applied to the jade (See table 1 for details).

Although techniques for identification of treated jade have been advanced as a consequence of using infrared-spectroscopy (Fritsch et al) and scanning electron microscope (Tay et al), the majority of gemmologists and jewellers have yet to lay their hand on some of these instruments.

Going back to basics

The use of simple gemmological tools, such as a loupe or microscope and table lamp can be very useful—especially on a buying trip in the countryside.

First, the use of light in gemmological study is vital for the observation of inclusions; that is use dark field illumination for single crystal gems like ruby or emerald. But the case of jade, to observe multi-crystalline structure, the use of reflected light is most useful. Second point to take note of is that jadeite-jade is a rock unlike that of the single crystals of ruby or emerald. Jadeite-jade consists of an aggregate of interlocking crystals that have either a granular and/or fibrous grain structure (Fig. 1). The ‘dimpled effect’ mentioned by Webster could be seen in some poorly polished jadeite jade; but as technology improved in polishing of jade, many of the modern day natural untreated jade cabochons and carvings are so well polished that some of it have mirror-like reflection (Fig. 2).



Fig. 2. Mirror-like surface reflection of a natural untreated jadeite-jade viewed under reflected light (20x).
© Tay Thyé Sun

Third, under reflected light, observe the grain structure damage caused by acid treatment of a B-jade. A close up study of its surface will reveal a loose grain structure, or an interface between the grains that is slightly apart (Fig. 4). Some of the fissures in the jade could be filled with polymer or wax, which may be visible under a loupe. For B+C-jade, the dye can be observed in between the grain structure and also in fissures (Fig. 5) under transmitted lighting or fibre optic



Fig. 3. A set of three B-jade rings. © Tay Thye Sun

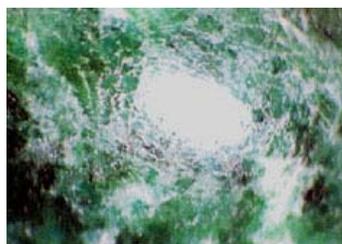


Fig. 4. Surface texture of one of the B-jade ring showing the damage to the grain boundary caused by acid treatment viewed under reflected light (35x) © Tay Thye Sun



Fig. 5. B+C-jade bangle, note the colour concentration along fissures and between grain boundary viewed under transmitted lighting (20x). © Tay Thye Sun



Fig. 6. Three colours jadeite jade also called Fu Lu Shou are popular with collectors. © Tay Thye Sun

Table 1: Disclosure of type of treated jade

A-jade refers to natural, essentially untreated jadeite-jade that has:

- No polymer impregnation; but a slight wax coating is considered to be acceptable by the trade. It is a routine to soak jade in hot wax and polish it later.
- Colour is natural and remains unaltered.
- Mild bleaching. Jade cutters use acidic plum juice as cleaning agent to remove adhesive abrasive dust from the surface of the jadeite-jade after cutting. As this is a traditional method of cleaning, its use is considered to be acceptable by the trade. Over the years, other types of bleaching agents (surface cleansers) e.g. hydrochloride acid, nitric acid, sodium hydroxide, or ash of certain plants, etc., have been used.

B-jade (Fritsch et al., 1992) refers to natural jadeite-jade that has been bleached and polymer impregnated:

- This treatment involved two steps. The first step involves the use of strong acid to bleach out iron oxide staining from surface-reaching fissures, as well as dark mineral inclusions within the jadeite. The second step involves polymer impregnation to fills any voids left by the bleaching.
- The impregnating colourless polymer helps 'stabilize' (toughen) the bleached jadeite-jade.

C-jade refers to dye jadeite:

- Dyed green colour is the most desirable, but other colours such as lavender (Koivula, 1982) or brown are also produced.
- These artificial colours do not last the rigors of normal wear and tear.

B+C-jade (Wu, 1997) refers to a B-jade that is dyed:

- Dyed colours include green, brown, or lavender, combination of these colours.
- Polymer impregnation is routine as the last step in producing B+C-jade.

D-jade (OuYang, 1997) refers to jade doublet:

- Green jade top (Hte Long Sein) with translucent plastic backing.

lighting. Natural jade with three colours is also sought after by collectors. Green, lavender or brown in a piece of jade is called Fu Lu Shou (Fig. 6). Dyed material like this could be observed also. Partially dyed jade pieces continue to be a challenge for those who examine jadeites. Since the appearance of D-jade in the market, a mounted jade is just as suspicious as any jade—even if the dealer swears by it that it is natural. To play it safe, unmount the jade to have a good look for colourless plastic backing with less than millimetre thin jade as cab.

Conclusion

It is a constant challenge for jewellers and gemmologists alike as new treatments of jade constantly emerging from Far East Asian countries. Undoubtedly, the treatment of jade at the end of the 20th century has caused a 'big storm' in the jewellery market. Now, in the 21st century, the word B-jade, B+C-jade and D-jade have entered into the dictionary of jade and will remain so for a long time to come.

Acknowledgement: Thanks to Dr. Grahame Brown for editing. Prof. OuYang C.M., Prof. Tang S.M., and Dr. Puah C.M. are acknowledged for their kind assistance in my jade research over the past years.

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Jewellery Arabia 2005

by Nick Sturman, Bahrain



*His Highness Shaikh Khalifa bin Sulman Al Khalifa, Prime Minister of Bahrain, opening the Jewellery Arabia 2005 exhibition.
Courtesy of Arabian Exhibition Management*

November 23rd through to 27th witnessed the hosting of the annual Jewellery Arabia exhibition in Manama, Kingdom of Bahrain. Once again the exhibition proved bigger and better than the year before, a trend that will hopefully remain for years to come, and was attended by some famous names in the business. Most prominent amongst them was Graff Diamonds, who for the second year in succession displayed some truly remarkable gems in some equally significant pieces of jewellery. Other 'big' names in attendance included Mouawad, Chatila, Gem-Star, Damas and the Bahrain Jewellery Centre pavilion which housed representatives from such brands as Baume & Mercier, Chaumet, Chopard, Fred, H. Stern, Harry Winston, Omega, Patek Philippe, Piaget, Schoeffel and Vacheron Constantin amongst thirty-six other not too unfamiliar names!

The exhibition was opened by His Highness Shaikh Khalifa bin Salman Al Khalifa (Bahrain's Prime Minister), as has been his custom over the last 14 years. Since the first Jewellery Arabia opened its doors in 1991, the amount of visitors, trade and public, has swelled annually to reach a total of 34,148 at the close of the event on the evening of the 27th November. This contrasts to the 4250 who attended the first event back in 1991, which lasted for four days at the time. This year also witnessed the amount of floor space increase to its largest area of 14,000 square metres, compared with only 1000 square metres at the first Jewellery Arabia. Bahrain's exhibition centre itself has been expanded a number of times to accommodate the growing number of exhibitions held on the island over the years. This expansion has also meant that the number of exhibitors visiting the island annually has also increased and this year's jewellery exhibition hosted over 500 exhibitors from 28 nations. Pavilions from a number of countries, including Germany, France, Thailand, India and China were present, with the latter three being amongst the busiest during the event.

Although Jewellery Arabia exhibitions are advertised as "trade only", and there is indeed a trade/wholesale element to the show, practice has shown that they never really turn out to be wholly such and the public are welcomed openly. This is achieved by printing thousands of invitations each year that find their way into the correct hands! Hence the exhibitions tend to be a hive of activity and the 'ladies morning' that exists during the morning of one of the five days always proves to be popular. The type of exhibits also tend to follow a trend, with jewellery items outnumbering loose stones and jewellery supplies/equipment. However, even though a ban on the sale and display of cultured pearls exists in Bahrain, the only country in the world to have such a law, cultured pearls are permitted (only those mounted in rings, pendant and brooches though, as loose pearls and rows/necklaces are still not permitted) during the exhibition on the condition that they are only sold to business people and the public not connected with Bahrain. The Directorate of Ports and Customs are meant to seal any items containing cultured pearls that are sold, for collection at the point of exit from Bahrain, i.e. airport or causeway linking Bahrain to Saudi Arabia.

On a personal basis, the exhibitions always prove to be a mixture of hard work and interest! Hard work because our stand, the Directorate of Precious Metals and Gemstone Testing of the

Ministry of Industry & Commerce, always offers a free testing service for the visitors. Thus the stand usually gets very crowded with people eager to see that they are “buying what they have been told they are buying” (i.e. the ‘topaz’ the exhibitor is selling in their ring really is a topaz and is not citrine quartz) or with curious people who either just want some information or feel like ‘testing’ the staff’s knowledge! The interest factor comes from seeing people’s reactions to some of the results we give and from seeing all the new and interesting designs and materials that appear on the stands during the five day event.



Close-up of a intensely coloured Paraiba tourmaline of high purity. © N. Sturmann, 2005

In ending this report I would like to close by mentioning the two most interesting finds from a personal perspective. Although the Graff

stand was gemmologically interesting, as always, the items they brought this year did not, in my opinion, compare to the items they brought in their first year. No, the first gem material and stand that caught my eye was a really beautiful and spectacular Paraiba tourmaline (see figure above) on a stand hosted by Noor Gems from India. Although the picture does not do the stone justice it was remarkable for both its size and colour, the latter unfortunately is not really captured by the photograph shown here. It really had to be seen to be appreciated and at approximately \$20,000 per carat it would need to be appreciated! The same vendor also had some tanzanite, an alexandrite and some other more unusual stones, all weighing over 10 carats each, as well as a demantoid garnet necklace and matching bracelet on his stand. This was the first memorable stand. The second was a stand from Germany called Stefan Bayer. This stand displayed a collection of ‘conch pearls’ near a large conch shell and three Melo pearls next to a Melo volutes shell, as well as a large, approximately 200 carats, round ‘Melo pearl’ in a fancy necklace. Although I could not take a good photograph of these items, it was rewarding to see such pieces at this year’s event and rounded the week off nicely.

A final observation should also be made here perhaps, and that is that during our testing we came across a number of items (often suites of many pieces) that contained the apparently prolific ‘lead’ glass-filled clarity enhanced ‘rubies’ now well known in the trade. There was also evidence, from the colour and some inclusions, of a large amount of the Be-Treated type bulk-diffusion corundum on some stands. From our observations it would appear that disclosure of these treatments is far from satisfactory!

I hope that this report was of interest and would be happy to answer any queries about the event if anybody who is reading this has any.

For anyone who maybe interested, the organisers, Arabian Exhibition Management WLL, may be contacted by fax on (+973) 1755 3288 or by e-mail at fawzi@aeminfo.com.bh. Those in Europe may prefer contacting the worldwide agents, Allworld Exhibitions, in the UK by fax on +44 (0) 20 7840 2119 or via e-mail at mwaters@oesallworld.com

Madagascar story

by Catherine Verny-White

For years I have dreamed of putting on my Indiana Jones hat to travel the world in search of treasure. This summer, with a trip to Madagascar, I had the opportunity to do just that. The treasure I was seeking was of course the sapphire mines of this beautiful African island. Our plan was to spend the first of two weeks driving south on route 7 from the capital Antananarivo (known as Tana), passing through Ilakaka, to Tulear on the south west coast.

First stop in Tana was a visit to Tom Cushman at the Institut de Gemmologie de Madagascar (IGM), to make contact with our driver and visit the gemstone market outside the main train station. We drove for between three and five hours a day for four days passing through the towns of Antsirabe, Ambositra and Fianarantsoa. We watched as the landscape changed from cultivated hills of rice paddies, rain forest, rugged and rocky mountains, to vast open plains of savanna grassland. We were able to spend the night in a rainforest camp, visit a number of



Fig. 1: The polished gemstone market is held outside the main train station in Tana. © C. Verny-White, 2006



Fig. 2: Madagascar gems, sold in Ilakaka. © C. Verny-White, 2006



Fig. 3: While a man works at the bottom of the 18m shaft his partners keep the oxygen flowing. © C. Verny-White, 2006



Fig. 4: One of the deep open pits, all dug by hand. © C. Verny-White, 2006

national parks to experience some of the island's incredible menagerie, visit a tiny isolated village where the women are developing a name for themselves weaving beautiful wild silk shawls, experience a very colourful Zebu market and learn a little of the people and their lives.

Twenty minutes south from the exotic Relais de la Raine hotel on the edge of the Isalo National Park, you arrive at the sprawling town of Ilakaka and the widespread mining activities. Walking away from the bustling main road with our contact, the quiet back streets lead to some of the original mining areas. Deep open pits and individual 18m deep shafts create a precarious landscape. The majority of the mining activity has moved away from Ilakaka, but there are some still trying their luck.

As our journey continued into the second week we had the opportunity to see the towering baobab trees on the west coast, some standing 30m high and watch the whales feeding and at play in the sea on the east coast. My thoughts on our adventure - the treasure is not only the gemstones but also the land itself, the people, their culture and traditions, and a good travelling companion.

For reading on the gemstones of Madagascar see www.gggems.com (Gem Safari) amongst others.

Fig. 5: Avenue of the Baobabs near Morondava. © C. Verny-White, 2006





Fig 1: Black diamond.
© M.S. Krzemnicki,
SSEF 2005

Black treated diamond with colour zoning

Michael S. Krzemnicki, SSEF

Recently, the author had the possibility to test a black diamond of 4.38 ct (Fig 1) which a client submitted to the SSEF Swiss Gemmological Institute. The black brilliant cut stone displayed a very peculiar colour zoning. When viewed from the top, it showed a regular colourless part in the centre surrounded by a nearly opaque black rim (Fig 2). This colourless part was relatively shallow and not seen throughout the whole stone. The shape of the colourless zone on the table facet resembled the scheme of the ideal proportions of a brilliant cut seen from the side. As we had not seen such a zoning before, we took a closer look on that stone.

Under the microscope, the colourless central part of the diamond showed a few large black inclusions. In reflection, this part revealed a polished surface slightly below the rest of the stone. The outer rim of the stone was black due to a high number of tiny carbon inclusions (amorphous carbon or graphite) along small cleavage cracks. The distribution of these black inclusions was very dense.

The shape of the observed zoning was interpreted as a growth structure. The outline can easily be explained as the result of the intersection of an octahedral diamond crystal with the plane of the table facet of the cut stone (see Fig 3, side-view through diamond crystal and resulting pattern on table facet of cut stone).

Black amorphous carbon or graphite inclusions in diamonds may be the result of natural transformation of diamond into these carbon phases or may be induced by a High Temperature (HT) treatment. Especially since black diamonds have become a fashion in the jewellery market, a lot of diamonds have been treated by such a HT process.

A dense distribution of tiny black inclusions in a diamond with a similar zoning as in our specimen was already described by our colleagues from the GAAJ laboratory in Tokyo in HT treated diamonds (see Hiroshi Kitawaki: Identification of black diamond, in GAAJ Gemmology, November issue, 2004). To proof if our specimen had been treated or not, we cooled the diamond with liquid nitrogen and took a photoluminescence spectrum using the laser of our Raman system. The resulting spectrum fitted very well with the reference spectra of HT treated black diamonds.

Based on the observed zoning pattern, we conclude, that the diamond was treated before cutting. It seems that the HT treatment is not affecting the whole volume of a diamond in the same way, especially when the rough diamond shows different generations. The outer part (diamond generation 2, see fig 3) which was already quite included (especially by cleavage cracks) before the HT treatment is readily affected which results in the formation of many small black inclusions in this part. In the rather pure centre (diamond of first generation, see fig 3) nearly no carbon or graphite is formed during the treatment.

Based on our results, the stone was identified as a natural diamond with artificial colour, produced by a HT treatment.



Fig 2: Black diamond with colourless central zone and black rim due to many small black inclusions. © H.A. Hänni, SSEF 2005

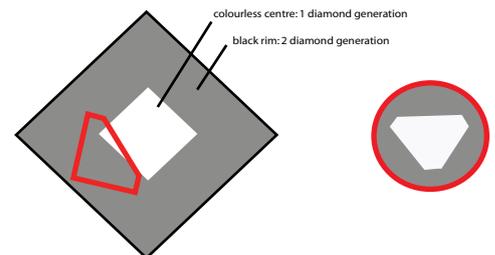


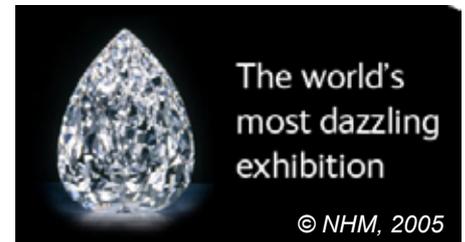
Fig 3: Schemes of a diamond crystal with a colourless centre (1. diamond generation) and a black rim (2. diamond generation) produced by HT treatment. Left: Side view of rough crystal before cutting, Right: Resulting pattern on table facet of cut stone. © M.S. Krzemnicki, SSEF 2006

Diamond Exhibition closed down due to security problems:

NHM press release:

The Diamonds exhibition closed on 23 November 2005. Explaining the closure, Dr. Michael Dixon, Director of the Natural History Museum, said: 'Since we began planning this exhibition, we have followed Police advice to the letter in terms of ensuring the security of our staff, our visitors, and the exhibition specimens.' 'That advice changed on the afternoon of Tuesday 22 November. It indicated a heightened criminal risk to the exhibition.'

'The Museum's priority is the safety and security of our visitors and staff. Based on Police advice, the only responsible course of action in this situation was to close the exhibition.'



Letter to the Director of the Natural History Museum London

by George Bosshart, M.Sc.SFIT. GG, IGC, Research Gemmologist, SSEF Alumni member

The editor: Although, this is a slightly shortened letter, written to the NHM well before closure of the exhibition, we thought it would be quite interesting for our readers, as you get a good overview on the exhibition which is now already history.



As Laboratory director of the Swiss Foundation for the Research of Gemstones in Zurich (1974-1990) and Chief Gemmologist of the Gubelin Gem Lab in Lucerne (1990-2004), I was in a position to examine some of the largest, best known, and rarest of diamonds and coloured gemstones, and to apply modern analytical methods.

On 12 July 2005, I profited from a short stay in London to pay a visit to Mr Alan Hart, Natural History Museum Collections Leader, as well as to the Diamonds Exhibition, since I keep being passionate about gemstones and active in the areas of gemmological research, publishing, and lecturing.

The NHM exhibition DIAMONDS presents every relevant diamond topic in a well-organised, richly documented, and colourful yet concise manner, easy to understand by an interested public and certainly overwhelming laymen. Nothing but praise. Or very nearly so.

What I consider an excellent idea, is the „ramp of fancy colours“ as an eye-opener right at the entrance of the exhibition. This rainbow should help correct the widespread view of diamond being colourless and nothing but that. Having examined diamond rough only occasionally, the size and crystal perfection of the yellow 616 ct octahedron impressed me very much.

The historic examples and details of the exhibition were the most thrilling part for me, e.g. the chronological sequence of the earliest diamond cuts, from the Point cut to the Table cut and Rose cut. Reference to the best piece of historic cutting research, the book titled Diamond Cuts in Historic Jewellery 1381-1910 and published by Herbert Tillander (Arts Book Intl, 1995) would not have been superfluous here. The medieval rings on display are rare specimens and would deserve brighter spotlight illumination plus magnifying lenses to better illustrate their unique shapes.

An outstanding showpiece to me was the large and colourless, nearly round diamond sphere. Diamond crystallizes in the cubic system, therefore round shapes, according to the laws of anisotropy, are „forbidden“, yet diamonds do get shaped as round bodies by magmatic corrosion and during fluvial transportation. The exhibited specimen is rare, and I wish its geographic or geologic origin and its weight and owner would have been indicated.

The wide span from early Indian diamond jewellery and ruler's insignia, described in the NHM Library's beautifully conserved first English edition of J.B. Tavernier's famous travel accounts, via a complete set of old and new diamond cutting tools, to the latest in CVD products is amazing.

I highly appreciated that diamond inclusions were not misrepresented as flaws but as natural enclosures, valuable evidence of diamond's petrologic and geographic origin and identifying each diamond as an individual, and different from the next. It goes without saying that a ruby or violet-red garnet inclusion (like the one on display) would be cherished by every gemmologist and true diamond connoisseur if they possessed such a miracle of nature.

In summary : If I lived closer to the NHM of London, I would definitely pay your brilliant exhibition a second visit.

PS: For interested readers, you may even now order the exhibition booklet with a number of colourful photos from the exhibition. Unfortunately, the printing quality of the booklet is not outstanding, especially regarding the coloured diamonds.

For ordering, see: <https://www.nhmshop.co.uk/diamonds-shop/category.html?pageNo=2>

Short notes

by Peter Groeneboom (SSEF Alumni Ambassador)

Dear Members,

First, I want to wish to all of you a Very Happy and Prosperous New Year ! I hope we can meet many times in 2006 and that the SSEF Alumni will grow and become very active.



© M.S. Krzemnicki, SSEF 2005

Hong Kong Fair - September 2005

It is very clear that the world economy is getting better this year. Especially in Europe consumers start to buy again.

There was a lot of business going on at the last Hong Kong September Fair, sales were very brisk. Prices of most gemstones were stable, exceptions were tanzanite which is increasing in price. Chrysoberyl cat's-eyes I found low in price and were abundant in good quality. Perhaps due to treatments?

Because of the worldwide demand and no increase in production, all the cultured saltwater pearls are going up in price and probably will continue to do so also in 2006.

With cultured freshwater pearls, things are less obvious: In fact, they get cheaper, but only a little. This is because good qualities become more available. Round pearls of 11 - 12

mm of good quality were hardly available a year ago and therefore expensive, this year there was more of these pearls and therefore the price went slightly down. The Chinese are producing every year better pearls. I think that now this progress is getting more and more interesting, as round white freshwater cultured pearls of 12 mm diameter with a very high lustre are available in the market. I have seen even cultured nucleated white pearls of 14 mm! But those pearls were not of good quality and very expensive (and therefore could not be sold). But it is only a matter of a few years and such cultured pearls will be available in perfect round shapes and good surface qualities. Question: What will be the consequence for the trade of white South Sea cultured pearls?

London - Gem-A conference - October

The Conference in October 2005 was held as a tribute to Prof. Dr. Eduard Gübelin, world-famous gemmologist, who passed away in March 2005 at the age of 93 years. Keynote speaker was John I. Koivula (AGTA), who showed (of course) many extraordinary slides of inclusions I gemstones. Unfortunately, he did not bring the 'Photoatlas Volume II' to the conference, as it was still in press at that time.

The following day, a group of attendees went to the diamond exhibition at the Natural History Museum, just in time because some time later the exhibition was closed (see above). Police got the rumor that there were plans to steal the diamonds and the museum management thought it safer to close the exhibition. Personally I was not very impressed with the exhibition. Some years ago there was an diamond exhibition in Paris which was larger and better described.

Photoatlas of inclusions in gemstones, volume II and III

In December, I visited the publisher of the 'Photoatlas Volume II' and they assured me that the book is available in January 2006. There was something strange about the price, probably a mistake, but till now I got no comments on my questions about it. According to the info they gave me the price is Euro 250, but US \$ 230, which means it is about Euro 55 cheaper in dollars! Very strange.

The publication of the volume III is expected in October 2006.

News from the library:

Search the Web....

Some useful websites just found on internet:

<http://www.gemstone.org/gem-by-gem/>

List of gemstones compiled by the International Coloured Gemstone Association ICA. Rather general information, but nice pictures...

<http://www.minsocam.org/MSA/AmMin/TOC/>

American Mineralogist, an International Journal of Earth and Planetary Materials.



American
Mineralogist

Table of Contents - 1916 to 2006, with plenty of mineralogical publication to download
But attention, this is mineralogical science !

<http://earth.google.com/>

Satellite pictures of the earth... so make a trip to Mogok in Myanmar from your desktop...

<http://map.search.ch/>

Just zoom into Switzerland...

<http://www.wildmadagascar.org/>

A lot of information, maps and photos from Madagascar. This is the ultimate geographic resource for everybody planning to go to the island of gemstones.

<http://www.yourgemologist.com/Kitchen/kitchen.html>

Just try it.....

SSEF Alumni News:

SSEF Alumni Memberslist

For all those who want to know who actually is an SSEF Alumni member at the moment, we will send a memberslist. Please send an email to info@ssef-alumni.org and you will get the names (and the city) of the SSEF Alumni members. Email and details of address are not given without the permission of the SSEF Alumni members.



SSEF Alumni and the SSEF Swiss Gemmological Institute

As every year, SSEF offers a large variety of gemmological courses in 2006. As member of SSEF Alumni you will exclusively profit with a **10% reduction** on all SSEF course fees, even if you register later than the 31. December 2005.

Why not register for a practical training day (20 March, 25 April, 6 June, 24 October 2006), during which you can practise your skills again in a very relaxing atmosphere....

You find all courses on the internet at www.ssef.ch or contact gemlab@ssef.ch

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Please send your business card together with a list of your services to the SSEF at gemlab@ssef.ch, or SSEF Swiss Gemmological Institute, Falknerstrasse 9, 4001 B asel, Switzerland, with the comment: SSEF Alumni Benefit. Our webmaster will upload regularly the promotion information on our website.

How to become a Member of SSEF Alumni ?

The SSEF Alumni Organisation is open for former participants of courses at SSEF Swiss Gemmological Institute, FGA students, and further interested persons in the gemmological community.

The SSEF Alumni is intended as a platform for the exchange of information and for continuous gemmological formation. Membership fee is 50 Swiss Francs per year. Please see our website for more information (www.ssef-alumni.org) or contact our President, Leon Ascot at info@ssef-alumni.org, when you would like to participate at exclusive SSEF Alumni events and to receive the highly informative electronic newsletter four times a year.

Impressum:

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gemlab@ssef.ch

You are invited to contribute to the newsletter with short articles of interest for other SSEF Alumni members. All contributions should be sent to Dr. Michael S. Krzemnicki gemlab@ssef.ch and will be published after editing if appropriate for this newsletter.