

SPECIAL REPORT



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CIBJO Gemmological Commission

CIBJO's Gemmological Laboratory Blue Book expanded to include a comprehensive test method protocol

By Hanco Zwaan, President, CIBJO
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Last year, at the CIBJO Congress in Yerevan, Armenia, a new draft of the Gemmological Laboratory Blue Book was discussed. The previous edition covered laboratory management and good practices only, but the new draft also included a comprehensive test method protocol, describing

methods that, at the very minimum, are necessary to properly identify a particular gemstone or pearl species and/or variety, taking into account the detection of treatments, synthetics and imitations. Definitions of test methods and an extensive list of key references were also incorporated.

This large expansion of the book was discussed thoroughly during the commission meetings in Yerevan, and later presented to the CIBJO board of



CLARIFYING THE UNDETERMINABLE



Hanco Zwaan, President of the CIBJO Gemmological Commission.

directors for review and approval. Having received the green light in January 2017, the book now offers an important reference for a laboratory's best practices, in terms of management and technical requirements, and for methods that should be used to get reliable results in particular cases.

At upcoming congresses, it is envisaged that we will incorporate more agreed-to standards. The importance of this process cannot be emphasised enough, with the rapid developments in the production of synthetic stones, new treatments and gem localities, as well as



Claudio Milisenda, Vice President of the CIBJO Gemmological Commission.

the proliferation of commercially-driven "certifying" organisations.

Progress made on colour-term harmonisation

At the 2016 CIBJO Congress in Armenia, a special session was held to consider inconsistencies in the designation of specific colour terms, such as "royal blue" and "pigeon blood red" on coloured gemstone reports. Diverse standards currently are applied by different gem labs when such terms are used.

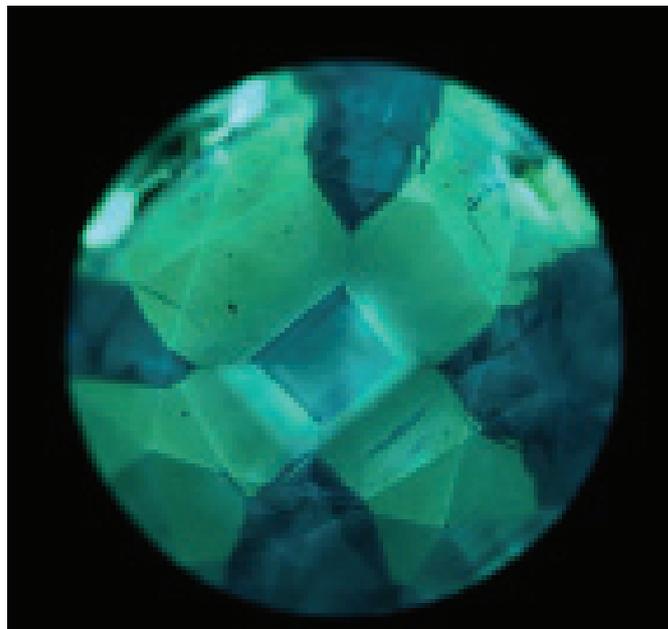
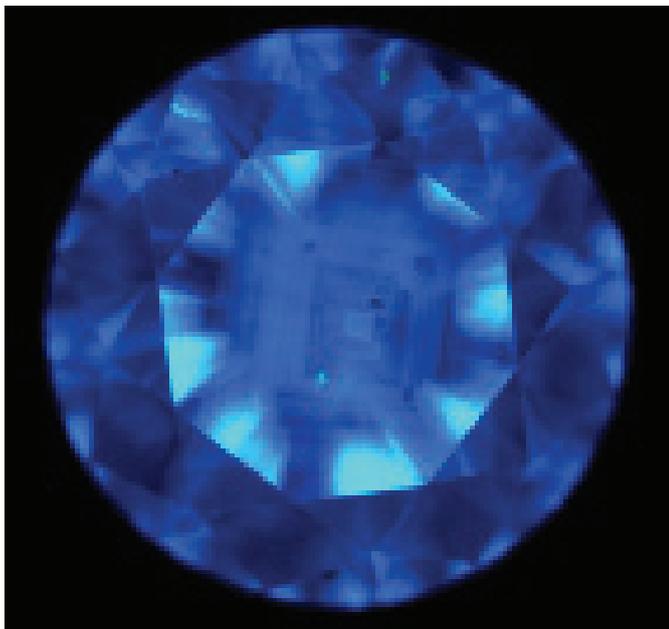
Nilam Alawdeen, President of the CIBJO Coloured Stone Commission, presented the trade's point of view on this subject, and Dr. Michael S. Krzemnicki, Director of the Swiss Gemmological Institute SSEF, Shane McClure, Global Director of Coloured Stone Services at the Gemological Institute of America (GIA) and Pornsawat Wathanakul, the former director of the Gem and Jewelry Institute of Thailand (GIT) explained the views of their laboratories.

They explained in depth the colour terms that are currently used, and the standards that are applied. All three laboratories represented use master stones to compare colours of unknown rubies and sapphires. The Swiss SSEF and Gübelin laboratory, which was represented at the session, have already harmonised their standards when it comes to the use of these colour terms.

During this informative special session, it became apparent that only very well saturated colours, within strict limits of hue and tone, are eligible to receive specific colour terms like pigeon blood red or royal blue. The laboratories appeared to disagree on the degree of



Pornsawat Wathanakul, Vice President of the CIBJO Gemmological Commission.



Which testing method is needed in each specific case, to properly identify and characterise gemstones? A test method protocol for laboratories is now incorporated in the Gemmological Laboratory Blue Book. As an example, Diamondview, which reveals luminescence patterns in diamonds, is one of the instruments that is used to distinguish diamond from its synthetic equivalents. (Photo: Netherlands Gemmological Laboratory)

fluorescence necessary for the term pigeon blood red to be awarded, and even whether or not fluorescence should be taken into account when assigning this colour term.

There also was disagreement as to whether the colour terms could only be applied to natural stones, or to heat-treated stones as well. But the SSEF, GIA and GIT representatives did agree to compare the respective master sets each is using to assign specific colour terms. This will be a first step towards possible agreement on the qualifying colours.

Additional steps that need to be taken on this issue will be discussed at the 2017 CIBJO Congress in Bangkok, and hopefully progress will be made.

Clarifying terminology for 'undeterminable treatments'

At the Yerevan congress, Mr. Alawdeen also addressed concerns that have been raised regarding the lack of comments on laboratory reports for gemstone treatments that are "undeterminable," such as heat treatment of aquamarines or the irradiation of tourmalines. A person reading the report may consider that the lack of information provided implies that the stone is not treated, rather than communicating that there may have been a treatment that is undeterminable.

Mr. Alawdeen argued that it would serve the trade better if the statement "undeterminable" is recorded on the report. The Gemmological Laboratory Commission (GC) was requested to consider this concern.

The Laboratory Manual Harmonization Committee (LMHC) published an information sheet outlining the

procedure it suggests to be used when commenting on the report that treatments are undeterminable. The wording is: "**[Name of Gemstone] is commonly heated and/or irradiated (to improve or change the colour)**" and/or "**Colour authenticity is currently undeterminable**" or "**Colour authenticity has not been determined.**"

But when asked what happens in reality, while some of the laboratories represented in LMHC indicated that they indeed use this terminology, others would not make such a comment, but would describe the specific treatments concerned on a dedicated website, which can be linked to by scanning a QR code (a machine-readable matrix bar code) appearing on the report.

Concerning undeterminable treatments, the Gemmological Commission suggests that CIBJO adopt a general statement, which is proposed in the newest draft of the Gemstone Blue Book (see footnote ¹). It

1. In the latest, yet to be approved, version of the Gemstone Book, the following new clause has been added:

4.2.5.3 Gemstones that are suspected, without certainty, of being treated.

It is sometimes difficult if not impossible for traders and gemmological laboratories to determine if a gemstone has been treated, but a treatment is suspected.

*Example: a) Heat treated aquamarine, tanzanite, tourmaline, etc.,
b) Irradiated beryl, kunzite, tourmaline, etc.*

NOTE – When there is a possibility that the gemstone has been treated it is prudent and appropriate to disclose the treatment rather than to be silent. See light blue highlighted treatments in the "possible treatment" type column of clause 8 Annex D and disclosure requirement in clauses 4.2.5.1.5. and 4.2.5.2.8.



Pink tourmaline and blue topaz may be irradiated to modify their colour. This treatment is usually applied to colourless topaz to change the colour to blue, but in the case of pink tourmaline treatment it is less certain how frequently this treatment is done. How to deal with these undeterminable treatments will be topic of discussion at the 2017 CIBJO Congress in Bangkok.

indicates that an absence or lack of comment in the treatment section of a laboratory report does not necessarily mean that the stone has not been subject to a treatment, for there are treatments that cannot be definitively proven to exist. The statement could be followed by a list of undetectable treatments.

This general statement could be referred to by laboratories on their documentation and websites, which would be specific, as compared to, for example, the type of comment "tourmalines are commonly heated and/or irradiated," which could be considered overly vague, because it is not exactly known how common these treatments are, or if they have been applied at all.

As an alternative for saying "aquamarines are commonly heated," one could add more descriptive information in the following way: "Aquamarines from various occurrences may be thermally enhanced to modify their appearance. Thermal enhancement of aquamarines is considered stable and permanent under normal wear and handling conditions, and it is generally accepted by the international gem and jewellery trade. Currently, definitive proof of thermal enhancement of aquamarines cannot be provided."

Requesting to have such statements for every stone on reports would be extremely difficult to implement and

control. In the case of Santa Maria-type aquamarines, it can be determined that they are not heated. In some cases, the same goes for tanzanites. It is reasonable to suspect that very light, strongly greenish blue aquamarines are all heated.

At the congress in Bangkok, a list will be discussed with treatments that may currently be undetectable by non-destructive methods, which can or should be commented on by laboratories.

If the various laboratories could agree on the list and harmonise procedures at this level, it would be a positive step forward.

Gemmological session at 2017 CIBJO Congress

This year the CIBJO congress will be held in Bangkok, Thailand, November 5-7, in conjunction with the World Ruby Forum, which will take place on November 4.

The Gemmological Commission Steering Committee (GCSC) will hold its pre-congress meeting on Thursday, November 2, from 08:30 to 10:00 AM.

The Gemmological Commission meeting will take place on Sunday, November 5, from 12:00 to 1:00 PM. Both meetings will be chaired by Hanco Zwaan (Netherlands), President of the Gemmological Commission, assisted by the commission's two Vice Presidents, Claudio Milisenda (Germany) and Pornsawat Wathanakul (Thailand).

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