Obituary 輓文

Jean Claude Michelou
7 Oct 1948 to
3 May 2021

With sincere condolences from all at GAHK.

Jean Claude "JC" Michelou, former Editor-in-Chief of ICA's InColor Magazine, and co-founder of Imperial Colors Ltd., Thailand, coloured gemstones suppliers, passed away Wednesday evening, 3 May 2021, in Bangkok, of complications from Covid-19. He was 72 years old.

Jean Claude's childhood to teenage years were spent between Paris, France, and London, UK where he studied at The ECCIP Ndb (Business School of Paris) and at London College of International Business and Economics.

For over three decades, Jean Claude lived and worked in Colombia, becoming an expert in emeralds, and gaining a passion for responsible sourcing. He was dedicated to service, and provided his gem business expertise for many organisations, including PISDAC project Pakistan, the Nigeria Ministry of Mines and Steel Development with the World Bank, UNICRI's Gemstone sector, two World Emerald Symposiums in Bogota, Colombia, the Gemstones Sustainable Development Knowledge Hub, and the Responsible Gems and Jewelry Council.

JC was a member of ICA from 1986, serving as Vice President on the Board of Directors from 2005-2007, and again from 2009-2015.

Jean Claude is survived by his companion, Catherine Munier, children Zoé, Yannick, Vanessa, & Nathalie, and his sister, Andrée Vaissière Michelou.

Clement Sabbagh, president of the ICA, and longtime colleague and friend noted that "JC worked passionately and tirelessly throughout his life to support the coloured gemstone industry. He was an active member of our Board of Directors for 18 years and served ICA for 8 years as Vice President. JC will be lovingly remembered by relatives and the many friends he had around the globe. He will be sadly missed by all of us at the ICA."

International Colored Gemstone Association

From left to right:
Brian SMITH, Guillermo GALVIS, Adrien TRIVIER, Catherine MUNIER, Zoé MICHELOU, German SALAZAR, Naomi HINDS
Front : Pearl NG, Jean Claude MICHELOU

Dr Bill Hanneman - In Memoriam
懐念 Bill Hanneman

Alan Hodgkinson

Dr Walter William "Bill" Hanneman
17 Oct 1927 – 12 Dec 2020

The name of Bill Hanneman has become something of a household word in the field of gemmology, but not from any conventional approach to the subject. He saw that for anyone wanting to study the subject, the traditional routes were expensive. This irked him to the extent that he set out to explore the field and devise gem testing tools which could let the user tackle the question of gem identification at a fraction of the cost, while enjoying a whole lot of fun in the process.

From his Californian niche as chief analytical chemist for Kaiser Alumina, Bill was always on the lookout for anything 'New', and at the time there was a rapid growth of gem fairs, mainly due to the activity craze of 'Tumbling' gemstones.

Visiting some of these events, Hanneman realised that few of the sellers had any idea exactly what they were selling. With a little swotting up of the literature, Bill developed a series of filters which could screen a whole display of gems, mainly bead necklaces, looking for intruders which showed a different filter response from neighbouring gems, and so was born the 'Hanneman Bead Buyer's & Parcel Picker's Filter Set'. More filters were to follow over the years with the appearance of new gems, as was the case with tanzanite and the inevitable 'Tanzanite Filter'.

As an aid to identification, Hanneman realised the significance of specific gravity, and understood the historic use of the beam balance (Westphal's) to determine the property. His own innovation was an alternative beam (aluminium of course), two feet long. This was too lengthy for ease of posting, so, his bar was halved and bolted together by the user when needed - a typical Hanneman improvisation which was a simple and inexpensive way to solve a problem. The beam balance could never compare with the results from density determination by the method of hydrostatic weighing to three or even four decimal places, but by reproducing the procedure three times and taking the average, to two decimal places, it achieved its purpose. This was by reference to a set of density tables, which quickly narrowed down the identity possibilities to two or three at the most. Final identity was then achieved by turning to one or more other of his tools. There was not even any calculation required of the beam balance, as the specific gravity was read off directly from the scale which was glued to the bar.

My friendship with Bill Hanneman can perhaps be blamed on YAG (the synthetic yttrium aluminium garnet). The original material was developed in the 1960s for uses in industry as a laser. It was in the 1970s, that it was first seen as having a use in the gem trade, as its hardness and optical properties, when faceted, presented a Diamond-like appearance. Its introduction into

Fig. 1 Dr Bill Hanneman (L) and Alan Hodgkinson

jewellery created an identification problem for the jeweller, as its refractive index of 1.83 was higher than the reach (RI 1.81) of the standard critical angle refractometer.

The April 1975 Journal of Gemmology carried an article on a 'new electronic refractometer' - the Gemeter. Hanneman appreciated the significance of the development, but recognised it was not in fact a refractometer. He also recognised that at nine inches in length, it was a bulky unit and saw that the whole conception could be miniatured into a small unit which would fit in the shirt pocket, and so was born the Jeweler's Eye. With an eye to free publicity, Hanneman first wrote the article 'The role of reflectivity in gemmology' for the Journal of Gemmology, April 1978. Then with an eye to sales, he modified the instrument as the "Diamond Eye' designed to reach a more focussed sector of the jewellery trade.

Dr Hanneman understood the innate complement of the two optical properties, refraction and reflection, and proposed the introduction of a new optical property – reflective power, which he termed 'Lustre units'.

The 'Eye' was reported in the UK journal "Retail Jeweller' and caught my eye, especially as the designer was coming over to the UK to help launch his instrument.

While in London, Dr Hanneman visited the gem testing lab in Hatton Garden (the first such institution in the world) and met with its director, Basil Anderson. They formed an immediate bond, as both were graduate chemists, apart from them each taking a liking to the other.

I travelled down to London to meet up with Bill Hanneman and his wife Margaret. Invited back to their room after dinner, Bill showed me a faceted gemstone he had acquired. Holding it to my eye 'Visual Optics' fashion, I observed on its low refractive index and dispersion similar to quartz, but the birefringence was superior to quartz. The low birefringence ruling out feldspar I suggested the stone might be a scapolite.

Hanneman was captivated by the procedure and accurate identification. I showed him the article "Visual Optics' I had authored in the 1978 Journal of Gemmology. Hanneman proceeded back to the States where he authored a paper on the subject in the 1979 Lapidary Journal, 'The Educated Eyeball'. This was the start of our friendship which was to last through the next 40 years, collaborating on various gemmological projects. As Bill developed new ideas, they were turned into simple-to-use gem testing instruments. This was accompanied by a small book, 'Affordable Gemology', which was to capture the imagination of many gemmologists, veteran and newcomer worldwide.

Encouraged by Bill to pursue Visual Optics further, I constructed an air refractometer which could indicate an approximate refractive index and birefringence. Its usefulness was confounded by the varying pavilion facet angles. I turned to Bill and he responded with the breakthrough, The Hanneman/ Hodgkinson refractometer - an instrument without any contact liquid requirement. While not possessing the acute accuracy of a critical angle refractometer, this was of little consequence, as the RI and birefringence could be measured, immaterial of the refractive index, which was the stumbling block of the standard refractometer. The readings recorded in degrees are then converted to refractive indices by reference to a booklet of tables.

An additional bonus was that for the first time, the dispersion of a gemstone could be measured. The accuracy was very useful if only approximate, but this was offset by the fact that, with the RI, birefringence and dispersion indices acquired, the identity invariably emerged by turning to a standard set of tables. One such set of tables was his booklet 'Determinative Gemology'. The pages reproduced tables of all the gemmological properties and was collated with the author's approval, from Joel Arem's book 'Color Encyclopedia of Gemstones'.

An additional bonus from the H/H refractometer was the B/D ratio. This is achieved by dividing the birefringence by the dispersion. As the new H/H refractometer could measure dispersion approximately, the B/D ratio was observed by simply looking at the stone via the Visual Optics procedure, and once the observer noticed any doubling of images, primary or secondary, the stone could then be axially manoeuvred to reach the maximum separation (birefringence) of the doubled image. This B/D ratio could then be used as a completely new optical index for the gem tester to employ without any instruments

whatsoever - provided the moon was out, or there was a candle in the vicinity as light source. Without such, a penlight provides another of Bill's pocket aids – fitted with a simple plastic cap slit to provide a perfect light source for Visual Optics in any situation.

Bill Hanneman was in his element if he could find someone or something gemmological to argue about. A good example was the article in Gems and Gemology which set out a suggested new framework for the garnets. The optical properties proposed as the framework, were not to Hanneman's liking, and he responded with his own garnet proposals. The Journals are not always co-operative with anything new and in exasperation, *'The saga of identifying garnets'* was published, dedicated to The Scottish Gemmological Association, the year he was our keynote speaker. This included two pull out pages which folded to form a three-dimensional model he christened "the Rosetta stone of garnets".

That the book was dedicated to our Association was due to the fact that I had invited Bill to be keynote speaker at our annual conference and he was so captivated by the friendly reception he received from Scotland.

Another battle was fought with the mineralogical world which argued that there was no such mineral name as tourmaline. Hanneman responded with an onslaught on such a preposterous idea which was at loggerheads with all the gemmological literature. He argued that the ivory-towered mineralogists would sit forever on the fence of a name for any new gem find. Meantime, the gem trade needed to trade, and if they were to prosper, they needed a suitable name from day one. This way the name could be spread, samples sought and the market could continue to prosper. The two worlds collided, but the name tourmaline survives, as it is an established fact, apart from its eclectic pleasantness of sound on the ear – always a plus for business. And so we now have tanzanites, Paraiba tourmalines and tsavorites, the latter name finally accepted by the mineral world provided it was tsavolite, to suffix the name from lithos, the Greek for stone.

Fig. 2 Some winners of the Antonio C. Bonanno Award for Excellence in Gemology
From left: Al Gilbertson, Thom Underwood, John Koivula, Alan Hodgkinson, Antoinette Matlins, Bill Hanneman, Cigdem Lule, Richard Hughes, Richard Drucker, Stuart Robertson.

'Affordable Gemology' was yet another Hanneman gemmological development which aimed to put the means of identifying a gemstone into the hands of anyone interested, without the precedence of spending much time and expenditure along the way. Such a journey is now one of exciting adventure. Once undertaken, the converted can follow the route as far as they need, by simultaneously studying the science of gemmology through one or other of the Internationally recognised academic bodies, or even ultimately to a degree, as in Birmingham, and this from a standpoint of simply admiring a gemstone and wanting to know its name.

It was inevitable, that as the name was repeated, a crescendo built up of requests for Hanneman to give talks and demonstrations. From local lapidary clubs to The Tucson gem fair, Hanneman delivered a new, laidback formula disseminating gemmological information (often with tongue in cheek). Then the invites came from further afield: Canada, Europe and so the name became further publicised by its self propagator. This is because Hanneman considered himself a 'SOG' – *self ordained gemmologist*.

Hanneman was one of the few gemmologists in the world to be awarded the Tony Bonanno award for contributions to gemmological education. The photo shows the recipient on the night of his investiture, alongside others who had received the award. (Fig. 2)

For all his scientific bent, Hanneman was also a stickler for the English language and the use of English in written or spoken form. This, when juxtaposed with gemmological education, lead to the Hanneman award for contribution to gemmological literature. Early recipients were Basil Anderson's *'Gem Testing'* and Richard Liddicoate's *'Handbook of Gem Identification'*.

All the above was undertaken for the sheer satisfaction of promoting gemmology with little thought of reward, as the talks were always undertaken without a fee. Just as the Rosetta stone has lasted five thousand years, so Hanneman's gemmological legacy will live on, for how long, we shall have to wait and see!

Finally in his 90s, Bill Hanneman gave up his hold on life but his name and reputation live on gemmologically.