CORNERSTONE

Journal of the Accredited Gemologists Association

Viewer Effect on Brilliance and the 'Nail Head' Diamond

By Michael D. Cowing, FGA

When diamonds are judged for brilliance in typical viewing circumstances, the viewer's head and body interfere with the illumination that would otherwise be coming from behind the viewer. Diamond proportions that respond poorly under these circumstances are perceived to have low brilliance. In some important instances, computer generated measures of brilliance that do not incorporate this viewer interference, may find unrealistically high values of brilliance for these proportions.

Evidence will be presented to show that greater consistency between computer generated measures of brilliance and human observation of brilliance can be obtained by taking explicit account of the interference in illumination resulting from the physical presence of the viewer.

The best case to illustrate the need for incorporating the effect of the viewer's physical presence on brilliance is a diamond with pavilion main facets cut between 44° and 45°. This is known as the 'nail head' diamond owing to its dark appearance under the table relative to areas outside the table. Assignment 8 of the GIA diamond grading course, copyright 1993, states "If the pavilion is very deep, much of the light is leaking out. Then the table reflection and the star facets look almost black, and the stone is called a 'nail head'."

Pavilion main facets of 45° exactly mirror light entering from above through eh table sending the light straight back toward its source. A viewer of such a diamond would observe a mirror image of his skin tones in those pavilion main facets. Furthermore, his head obscures any illumination from behind, causing those main facets to darken under the table. The pavilion girdle facets, which are cut between 1° and 2° steeper than the mains, also darken under the table giving the whole table area a darkness relative to areas outside the table.

Figures 5a and 5b simulate light passage in a 'nail head' diamond with a pavilion angle of 45°. 'Nail head' diamonds reflect light from the direction of the viewer's head even when the diamond is tilted.

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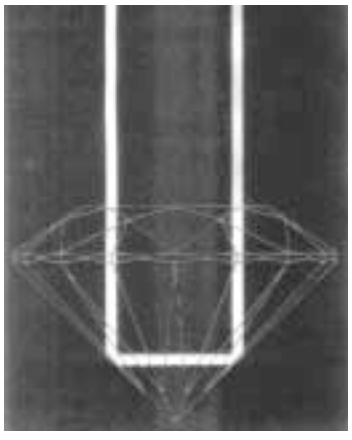

Figure 5a — 'Nail head' diamond with pavilion angle of 45°.

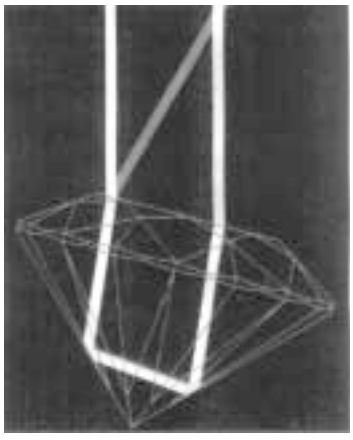

Figure 5b — 'Nail head' diamond with pavilion angle of 45° tilted 15°.

AGA is a nonprofit research, education and ethics organization benefiting professional and avocation gemologists as well as consumer interest. Membership programs include advanced gemological education seminars, workshops, and the AGA Certified Gemological Laboratory Program.

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President's Corner

David L. Harris, AGA President

This has been a difficult year for many of the members and the Country. This had not been a banner year for jewelry sales, prior to September 11, 2001. This date then changed our concerns for sales and business to the more important matters of family, friends and fellow citizens. The repeated showing of the incident is permanently emblazoned upon our memories.

AGA is an International organization of all beliefs and cultures. Yet, we share a common bond of the love of gemstones to enable us to work and communicate together. My hope for the future is that all mankind can find the common bond of respecting one another whether we believe in their way of life or beliefs or not. Simple respect for life. Maybe it's too simple.

Life does go on for the living and Tucson is no exception. Our conference this year will be held on Wednesday, February 6, 2002, at the Marriott University Park. We had to make a few changes due to cancellation of speakers, however, we have filled the agenda and we are ready to go. The evening events will be in the traditions of elegance and suspense as in the past years. Be sure you don't miss the presentation to this year's recipient.

Our list of nominees included, John Koivula, Richard Liddicoat, Robert Crowningshield, Gary Roskin, Jeffrey Post, and Martin Haske. The voting was heavier this year and each individual was more than deserving of the Antonio Bonanno Award. Congratulations to each of you!

Last year the band played until midnight and no one wanted to leave. The Jack Watson Orchestra will be playing again with all your favorite dance tunes. Even those without dance partners were dancing. Strange isn't it? Hopefully they were just having a good time.

This coming year we will present the proposed Intern program. You will be receiving a proposed program and you are encourage to review and make suggestions. Some of you will have the facilities to conduct this program and others already have programs in place. Either way, your input would be appreciated. I personally feel that the experience of the members of AGA will be beneficial to recent graduates of the GIA (GG) or the Gemological Association (FGA). The schools give the basics, but it is those who have experimented with techniques or have designed new methods which improve upon our ability to more efficiently perform our gemological duties.

This program may fill the gap from basic knowledge to the advanced study needed to detect many of the enhancements and synthetics in today's market. A committee to study the program and implement the final results is being formed and anyone interested is welcome to participate.

I am also looking for members to participate in a peer review section of the *Cornerstone*. Members who study and write opinions on research, books, journal articles, or any other gemological positions are needed. The section will offer discussion on proposed changes to standards within the industry or proposed theories on current gemological understandings. Please call me if you would be interested in participating.

I look forward to seeing you in Tucson at the conference and dinner.

David L. Harris

Viewer Effect on Brilliance and the 'Nail Head' Diamond

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Much course and textbook literature attributes the undesirable 'nail head' appearance to light leakage out of the pavilion. Primary and secondary leakage (leakage at the first and second point of internal reflection) occurs to a greater extent in gemstones with lower refractive indices (R.I.), such as quartz, beryl or the plastic used in the GIA GEM Instruments' Proportion Comparator demonstration tool. Compare the Figure 6a photograph of the demonstration tool[1] and Figure 6b derived from the Russian software. They are similar and illustrate the secondary, pavilion light leakage that occurs with steep pavilion angles in the plastic demonstration tool.

In diamond with its relatively high refractive index, the pavilion angle would have to approach 52.5° before this type of leakage would become apparent in the pavilion main facets in the table in the face-up viewing position. The 'nail head' appearance is evident in diamonds with pavilion angles between 44° and 45°. Thus, as we see in Figures 6c, 5a and 5b, the dark 'nail head' appearance is due not to loss of light through the pavilion, as is commonly taught. Rather , it is due to a steeper than 'Ideal' pavilion that is reflecting light to the 'normal' observer from the area of his head rather than from an unobscured source of illumination.

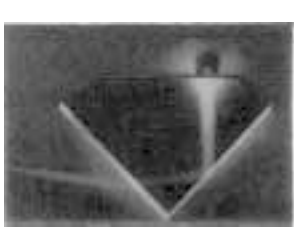

Figure 6a — GIA Demo of pavilion light leakage in a 'nail head' diamond.

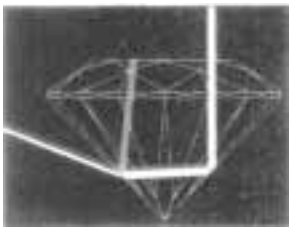

Figure 6b — Path of light in plastic with a lower R.I.

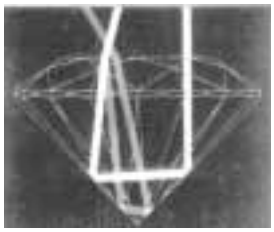

Figure 6c — Path of light in diamond, R.I. = 2.42.

A computer model of the 'nail head' diamond will not show the darkening caused by the observer's head if the illumination model does not take into account the way light is blocked by the physical presence of the observer.

To demonstrate the importance of the viewer's effect on the diamond's illumination, we created a photographic setup using three actual diamonds: a close to 'ideal' cut and two 'nail heads'. Two lighting environments were used. The first approximates hemisphere lighting having diffuse illumination in a 180° hemispherical arc above the diamond's girdle. The second approximates hemisphere lighting but with light blocked in an area above the diamonds to approximate a close-up viewing situation. In both cases, the three diamonds were photographed simultaneously. Interchanging them produced essentially no change in appearance, verifying that, for comparative purposes, each was illuminated in the same manner.

In the diffuse hemisphere lighting photograph (Figure 9a), all three diamonds have similar even brilliance. There is a slight edge to the near 'ideal' cut due to some dark areas in the outer table region of the 'nail head' diamonds. However, the two 'nail heads' are very bright in the middle portion of their tables. Contrast his with the dramatic darkening of the whole table and star facet areas of both 'nail head' diamonds in the Figure 9b photograph. This appearance of the two 'nail head' diamonds is consistent with human observation, because it has accounted for the viewer blocking light directly over the diamond in the 'normal' viewing position.

This is photographic evidence that the typical 'nail head' appearance in a diamond with deep pavilion angles is not seen in hemisphere lighting. It is observable in lighting environments where little or no light is available in the area above the diamond as in the case of close-up inspection by the 'normal' viewer.

The following demonstration was inspired by a jeweler's deduction that if his head were truly causing the darkness, rather than light leakage, looking close-up at a 'nail head' diamond with a red bag over his head should turn the diamond's table to red instead of it simply looking dark.

Employing DiamCalc, we illuminated the GIA's example 'nail head' diamond with blue hemisphere lighting above the girdle. Instead of having no light below the girdle plane, we have added a lower hemisphere of green illumination. We simulated the effect of the jeweler's head covered with the red bag, by a circle of red illumination over the diamond. The pattern of colors seen in the computer simulation of the face-up appearance of the 'nail head' illuminated in this manner shows us from where each point on the diamonds surface is reflecting and refracting its light.

A green table would verify the occurrence of light leakage from the pavilion, because the green illumination would follow the reverse path to the 'normal' observer through the area which was leaking and turn it green. A red table would verify that the viewer's head interference is the cause of the 'nail head' diamond appearance. Areas of blue would have neither of these problems.

As the jeweler with the red bag on his head learned, the table shows red rather than green (see Figure 10) documenting the cause of table darkening in a 'nail head' diamond. Outside

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[1] *GIA Diamond Grading Lesson 6, 1993*

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of the diamond's table there are green spots indicating light leakage in those regions. The blue spots within the table show regions that have neither the problem of light leakage nor viewer interference. In a 'nail head' cut with very good symmetry these spots should be bright. Referring again to the actual photograph of the 'nail head' diamond in the upper left of Figure 9b, those bright points are apparent. The predictive ability of this reflection source detector adds verification of its utility.

What has been shown here with diamond photography and computer raytracing and imaging is that the observer's physical presence causes the loss in brilliance in the 'nail head' diamond. Literature that explains the table darkening in a deep pavilion diamond in terms of secondary light leakage misses the cause of this phenomenon in the typically cut 'nail head' diamond.

This example supports the idea that greater agreement between computer generated measures of brilliance and human observation of brilliance can be obtained by taking explicit account of the interference in illumination resulting from the physical presence of the viewer. ◆

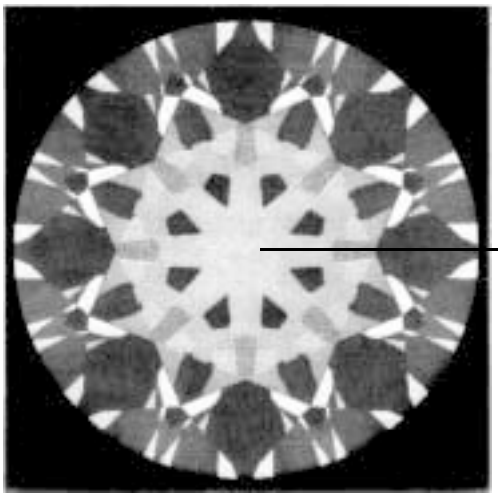

Figure 10 — GIA's 'Nail head' example in the reflection source detector.

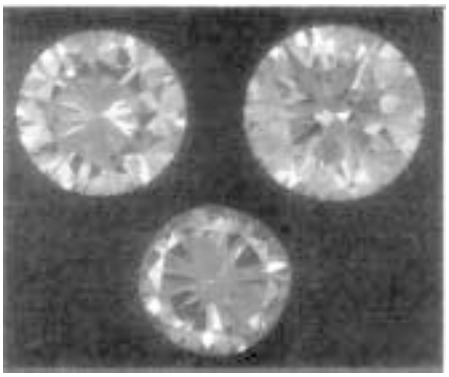

Figure 9a — 'Nail heads' vs. near 'Ideal' cut diamonds in hemisphere lighting created by diffusing two fiber optic light sources.

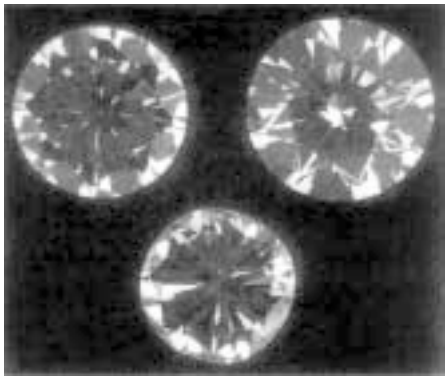

Figure 9b — 'Nail head' vs. near 'Ideal' diamonds in hemisphere lighting partially blocked as in close-up inspection.

Table 1. Proportions of diamonds in Figures 9a and 9b

Position	Diamond	Weight (ct)	Color	Table Size (%)	Crown Angles (°)	Pavilion Angle (°)
Top Left	'nail head' 1	0.58	H	69	30.0	42.6
Top Right	near 'Ideal'	0.74	G	56	36.0	40.9
Bottom	'nail head' 2	0.49	I	74	37.6	43.7

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Book Review:

Gem & Jewelry Pocket Guide

A traveler's guide to buying diamonds, colored gems, pearls, gold and platinum jewelry

Renée Newman GG

$11.95 U.S.
International Jewelry Publications,
Los Angeles, California

reviewed by
Richard B. Drucker, GG

Renée Newman has several books to her name, all geared toward the consuming public. This book is promoted on the cover as *A traveler's guide to buying diamonds, colored gems, pearls, gold and platinum jewelry*. The book is definitely that, in a handy 7 x 4 ½ inch format filled with much information and some very nice photographs sure to be appreciated by consumers. Where the book does fall short however, is in semantics, though possibly a matter of opinion, and in a few of the pricing details of which my senses honed in for very obvious reasons.

The book has 17 chapters of which I found little fault in most of them. The book gives some information on care in several places which is always appreciated by the consumer. Treatment information is there for most gems and this is a difficult area to address. If an attempt is made to be complete, it would become too technical and too long for a pocket book. If it were condensed too much, it would be criticized for being incomplete. I think the author gives an adequate amount of information on treatments for the consumer. I only questioned her approach to her call for action. She states that if you spend a few thousand dollars or more, then the type and extent of treatment are important and five precautions are given including written information on the receipt and possible lab reports for "expensive" gems. But what is expensive to one may not be to another. This concept of "expensive" is repeated in the Gem Lab Documents chapter near the end of the book, stating the importance of a lab report on gems costing several thousand dollars. I agree that it is impractical to get independent lab reports on every gemstone, but one cannot arbitrarily decide the cutoff point. Also, my position has always been for disclosure of all gem treatments on all gems and it is difficult to separate when it is okay not to disclose as she has done.

As for pricing, the author gives several examples of retail prices for gems throughout. More pricing might have been helpful. I only questioned a few of the pricing examples. A few times, like on tsavorite for example, she gives a wholesale price. The book is for retail consumers and all pricing should be retail. The Paraiba tourmaline information is way off. She states, "In its finest qualities, it has wholesaled for over $5,000 per carat. Our research in Tucson the past few years yielded samples sold for $10-15,000 per carat. Also, again there is a reference to wholesale.

The pearl information is good, a difficult task with this ever-changing gem. Diamonds are also adequately described. Other chapters include information on gold and platinum, craftsmanship, gem sources, custom-made jewelry, choosing a jeweler and choosing an appraiser. The basics of these chapters work.

The chapter on *Euphemisms, Marketing Terms & Misnomer*s gives consumers a list of terms they might encounter that are misleading. This is good except for one area of debate. She refers to fracture-filled diamonds as the correct identifying term implying that jewelers prefer *clarity enhanced* as a better selling term. The reality is that fracture-filled is the misnomer according to John Koivula, chief research scientist at GIA Gem Trade Laboratory. Perhaps a future story is pending from *GMN* on this subject. For years, many of us have agreed with Renée on this one calling the process fracture-filled.

Since this book is a retail-oriented book, it may not have as much appeal to gemologists or jewelers as they should know much of this already. The information however, is good to pass along to customers and several jewelers sell books such as this directly to consumers at their store. This one might be added to their inventory and is sure to sell many copies. ◆

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Jadeite of Guatemala

New Color Discoveries

Jadeite that has not been subjected to chemical or heat treatment to change the color.

by Anna M. Miller, GG, ASA, Master Valuer

Hidden in a remote corner of Guatemala's Motagua River Valley is a secret jadeite mine. And, while getting to the site requires many hours of foot travel in rugged terrain, there is a huge reward in reaching the hidden mine: a reef of recently discovered lavender jadeite. The color of the jadeite yielded by this particular site in the last eighteen months is so outstanding that the entire history of jadeite in the Americas must now be rewritten. Commercial mining of the lavender jade got underway a little more than a year ago. The material, identified as "translucent jadeite jade" by a GIA trade laboratory report in 1998, has *never before* been seen in the Americas. The mine owners, Mary Lou and Jay Ridinger, an American couple living in Antigua, Guatemala, carefully stockpiled a cache of the rare color material until they felt the quantity was sufficient to meet expected market demand. In January, 2000, the Ridingers believed conditions were suitable for marketing the jadeite in beads, cabochons, and carvings. It was an instant success, and sales of lavender have topped all expectations.

But that is not the end of the jade story. Other discoveries followed the lavender with finds of jadeite in colors of pink, blue, white and yellow, as well as multicolored boulders. Because of the array of colors in one boulder, the multicolored jadeite promptly acquired the name "*Rainbow*." Today, *all* the newly mined jadeite colors, and "*Rainbow*" are being marketed in jewelry and carvings by the Ridinger's company, Jades, S.A., in Antigua, Guatemala.

Exploration Adventure in Guatemala

The Ridinger's mining adventures actually began long before the lavender jadeite find. In fact, lavender, pink, blue, yellow and "*Rainbow*" are simply the latest in a series of lucky jade discoveries. In 1974, Mary Lou Ridinger, an archeologist with extensive knowledge of ancient Maya culture and art, combined her passion for the Maya with clever detective skills, logical thought, and study of the writings of mineralogist/geologist explorers in Central America. Leading geologists and archeologists have long concurred in the belief of a main source of jadeite somewhere in Guatemala; some feel there is more than one lode. This primary jadeite source was lost at the time of the Spanish conquest, where the main interest was gold, and forgotten by the native people for more than 400 years. Guided by theory, geology, and results of her past archeological expeditions, Ridinger went looking for the jade source used by the ancient Mayans. Rough jade and artifacts appear to have been actively traded along routes ranging from central Mexico to Costa Rica. Ridinger noted, however, that most geological indicators focused in the Motagua River Valley. Months of exploration eventually resulted in a "Eureka" moment when she discovered a large outcropping of fine jadeite, *with original jade working tools scattered on site*. Without doubt, Ridinger turned theory into fact and found *proof* that Guatemala was the source of jade used in ancient items by the Olmec, Toltec, Zapotec, Aztec, and Maya civilizations. In effect, she had made a historic find of the source for most—if not all— the jadeite used by Mesoamerican cultures for three thousand years.

The First Jadeite Mine for Jades, S.A.

The isolated jadeite discovery site covered more than 4,000 acres and became the first mine quarry for the Ridingers. They have since found jadeite in a number of locations in the Motagua River valley, as well as recovering small boulders from stream beds. For several years, the first quarry produced jadeite in various shades of green, black, and fine white. A second quarry, discovered in 1987, made jadeite history with its yield of rich black jade containing flecks of precious heavy metals. The jade named "*Galactic Gold*," is the only jadeite *ever seen* that contains natural inclusions of silver, nickel, cadmium, pyrite, platinum and gold (verified by laboratory analysis). It looks like a starry night sky, and is visually distinct from any other jade. Jewelers who have never before seen or

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heard of black jadeite with natural heavy metal inclusions, often refuse to believe it exists, even when they are holding it in their hands.

Another Awesome Discovery — Blue Jadeite

The ancient legend that jadeite brings good luck to its owner must be true, because there was also the astonishing discovery of *blue jadeite* in the second quarry. The material is a semitranslucent, blue-green variety of what has been called *Olmec blue*. This particular color of blue jadeite is apparently the same material used several thousand years ago by the early Olmecs. The jade is known from its use in ancient Celt (hand axe) and axe-god carvings, with surviving examples usually seen in museums. *Olmec blue* jade is rare, and until the Ridingers discovered the source in 1987, this prized material has seldom been seen.

Current Mining Status

Currently, Jades, S.A., is operating three quarries while continuing to excavate the same jade outcroppings used by the ancient Maya people of Mesoamerica. For the most part, commercial mining is carried out with fundamental mining techniques. Larger jadeite boulders are broken up using a gasoline-powered jackhammer. Stones are than split into more manageable sizes using a ruby-tipped steel drill to make 8-inch channels in which a spreader-and-rod is forced until the piece cracks apart. The jade is hauled from the roadless valley site by mule train to distant waiting trucks where it is transported to the factory in Antigua. Once the jade reaches the factory it is cut with diamond saws, fashioned into cabochons, beads, plaques, or carvings, and polished by native Guatemalan workers. Following the jewelry-making traditions of their ancestors, ten to fifteen thousand traditional Mayan designs are produced in a variety of necklaces, beads, earrings, rings and bracelets. There is also a line of contemporary and more modern designed jewelry. Craftsmen produce settings in silver and gold from 14kt to 22kt.

Jewelry and carvings are showcased in the Jades, S.A. central showroom in Antigua, as well as their eight other showrooms in Guatemala, Mexico, Honduras, El Salvador, and Costa Rica. Jades, s.A. is the largest jade factory in Central America with roughly 63,000 square feet of factory and showroom area, and more than 100 employees at the Antigua site alone. The jade factory is well-known among tourists, celebrities, and politicians. In March, 1999, President Clinton spent two hours at the Antigua factory, picking out gifts of jade for family and staff, posing for pictures, and drinking Antigua coffee. Shortly after the clinton visit, the Premier of the Republic of China, Vincent Siew, paid a call to Jades, S.A.

Burial Masks

A specialty of Jades, S.A. is jadeite mask carvings. Museums and Archaeology departments in North and Central America have commissioned Jades, S.A. to produce replicas of pre-Columbian pieces, such as masks, figures stela, and ceremonial articles. The most famous replica made by Jades, S.A., is a burial mask of a Mayan noble discovered in 1963, called the *Tikal Mask*. The original mask, found in 174 pieces at the archaeological site of Tikal in Peten, Guatemala, has been attributed to the early classic Maya culture, circa 527 AD.

Guatemala vs. Burmese Jadeite

Appreciating Guatemalan jadeite may require a new mindset for most jewelers and gemologists, or a t the least, the perception of ideal "beauty" may need to change, develop, and expand. A course in jade appreciation may be particularly useful for those familiar with only the Burmese material. There are visual differences in the jadeites of Burma and Guatemala, and most of them have to do with color. While some individual pieces of Guatemalan jadeite cannot be distinguished from their Burmese counterparts, the majority of materials exhibit distinct color and sometimes textural differences. For example, the intense and highly saturated green hues of Burma jadeite are not often found in the Guatemalan material. The glass-like transparency and rich "emerald" green color of the classic Burmese Imperial Green, while elusive in Guatemalan jadeite, do exist. Some recently mined boulders show small patches of Imperial Green. The most frequent Guatemalan answer to Burmese "Imperial" is a bright green, translucent to semitranslucent material with fine to medium texture referred to as "Maya Imperial" by Jades, S.A. It represents the best quality material found to date in Guatemala. "Maya Imperial" is most often found as bright veins in a whitish background, or sometimes as small green spots. More readily available is jadeite in a wide spectrum of greens—mottled or variegated—from, a pale almost white, minty-green, semitranslucent to opaque with coarse texture, to a bright apple green, to green so color-saturated it appears black. When comparing textural differences between Burmese and Guatemalan jadeite, it should be noted that a high percentage of Guatemalan material has a coarse granular crystalline structure whereas the Burmese material generally exhibits a finer texture.

Guatemala Jadeite Sets Own Beauty Standards

Guatemala jadeite is setting its own standards for beauty. The colors are subtle. Guatemala jadeite colors remind us of

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Jadeite of Guatemala

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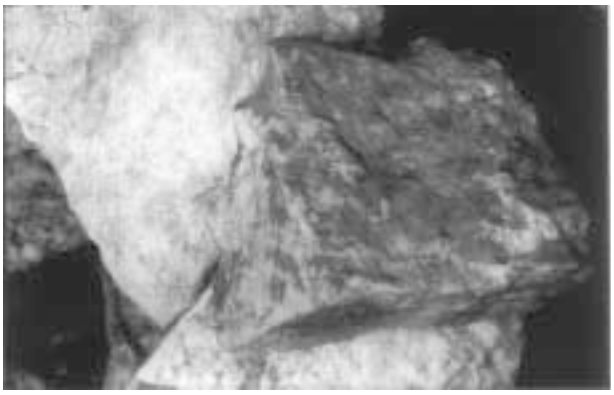
the muted color palette used by the great French Impressionists Monet and Manet where tones convey a soft, dreamy, romantic quality. The lavender jadeite should more suitable be color-categorized as lilac; yellows are creamy-yellows; pinks are pastel. The intense (naturally colored), highly saturated purple, golden yellow, reddish-orange, and red colors found in some Burmese jadeite have not been seen in the Guatemalan material.

There are many shades of green in Guatemala jadeite and the following are terms used by Jades, S.A.: Mint, apple, mottled, bright apple, and Maya Imperial. There is also lilac, blue, pink, yellow, Galactic Gold, Maya black, white translucent, pure white, gray, coffee, and charcoal. As with most of the jadeite on the world market, price depends principally upon the color. The other elements of value are: Translucency, texture, size, shape, polish, and finish. Jades, S.A. is currently producing a photo color-chart of actual jadeite cabochons to assist in communicating color when ordering or appraising.

The Importance of Guatemala Jadeite

A significant factor with the Guatemala jadeite is that it has not been subjected to chemical or heat treatment to change the colors. In today's marketplace where the majority of colored gemstones are baked, heated, or treated—by methods both controversial and experimental to intensify color—untreated stones of natural color are more frequently being requested by savvy buyers. The jadeite market in particular has been besieged with treatments that include bleaching, impregnation with polymers, dyes, and unknown fillings.

"B" jadeite is the name given Chinese jadeite treated with hydrochloric, nitric, or sulfuric acid, then impregnated with resin or wax. The acid treatment removes iron stains and other unattractive colors, but dissolves sodium form the sodium aluminum silicate structure resulting in durability problems. Some "B" jades suffer such severe structure damage they have been known to crumble under the pressure of stone setting. Observations of "B" jadeite show that treated materials often weaken and discolor with time. For gemstone lovers who want to buy jade, but do not want it enhanced in any manner, the Guatemala material provides an answer and alternative. Jades, S.A. guarantees all its jadeite colors as *100% natural and unenhanced*.



Lavendar/blue natural colors are apparent in this lilac jadeite boulder.

Can Guatemala Jadeite be Identified by Appraisers?

During a recent telephone conversation with an appraiser in England, a question was raised about a jadeite bangle being valued: Was it possible the jadeite might be of Guatemalan origin? The bangle, purchased some years ago by a tourist on a Caribbean cruise, was semitranslucent to opaque with a variegated green-white color. The appraiser noted that the color tone was soft muted. From the *color* description *only*, the bangle sounded as if it *could* be Guatemalan material.

When asked for additional information, the appraiser gave these specifics: "It is a one-piece bangle with a carved dragon head," he said, adding, "according to a former appraisal it was purchased about ten years ago."

Based on *that* piece of information the bangle is probably not Guatemalan jadeite. According to Mary Lou Ridinger, jadeite bangles were first produced commercially in Guatemala around 1995, and no known Guatemalan jadeite—in any type of jewelry—has been carved in a dragon's head design. Therefore, *for the time being*, it is possible that Guatemala jadeite jewelry *might* be identified stylistically. However, here is the caveat: Stylistic dating of jadeite jewelry may soon become impossible. In 1999, Jades, S.A. offered their first carved Buddha figures for sale. If sales are strong and there is buyer demand for oriental motifs, Asian designs are certain to become a regularly produced item.

Value Methods

Appraisers normally use one of two standard methods to estimate value on gemstones and jewelry: Cost and Market Data. *Cost* method means figuring the replacement cost of each component in a piece of jewelry (gems, metals, manufacturing, labor, etc.) adding it up to get estimated wholesale, and then adding on an appropriate regional

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Jadeite of Guatemala

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markup to estimate retail replacement value. *Market Data* method means using recent sales of comparable or identical items to estimate value. The great danger in using Market data to estimate value in Guatemala jadeite is in the tendency of the valuer to use Burmese jadeite as a comparable. For accuracy in valuation, Guatemala jadeite can only be compared with sales of other Guatemala jadeite. In addition, to be precise, appraisers should be familiar with the various qualities of Guatemala jadeite from poor to best, an often impossible task unless they have actually studied and handled the material. For this reason also, the *Cost* method does not work well for valuation because appraisers simply pick a price from a general price list without knowing quality details.

Putting a Value on Guatemala Jadeite

There is only one correct way to value Guatemalan jadeite: Be familiar with the material and prices from the source. While gemologists need a sound knowledge of the material's gemological properties and colors for identification, the additional rule for *appraisers* is: Go to the *source* of the product to obtain accurate pricing information. Appraising designer jewelry or luxury synthetic gemstones; ask the people mining or creating the gems about its precise value. Currently, less than a dozen appraisers in the United States have expertise in valuing Guatemala jadeite. However, they expect the number to increase as Jades, S.A., team up with The Master valuer Program, an appraiser training program, to give practical on-site jadeite education classes in Antigua. (Information about registration for the program may be found in a sidebar accompanying this article.)

They have not yet written the last chapter in the saga of Guatemala jadeite discovery. Expect to hear more about this very special jadeite during the next decade and beyond. They expect other colors, particularly reds, to be found, and the quest for the *source* of the long sought and treasured Imperial Green is to be continued. Although naysayers believe Guatemala has no more jadeite secrets, the hunters of new sources of precious jadeite will persevere. As Gerald Godfrey of Charlotte Equestrian & Gerald Godfrey Ltd., in Hong Kong, so succinctly stated in a magazine article on jade, "You do not collect jade—it becomes an addiction." ◆

Anna Miller, developer of the University accredited Master Valuer Program, arranged a workshop on location in the Jade mines of Guatemala last spring. The aim of the program was to provide appraisers, gemologists and interested jewelers, the opportunity to study Guatemalan jadeite, learning the keys to properly evaluating and then valuing this historically important material prized by Mayan kings.

The hands-on workshop offered an educational experience for anyone interested in appraising the jadeite

For interest in future workshops, contact Anna Miller at:
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