# THE JADES OF MYANMAR/BURMA

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Myanmar produces the finest jadeite worldwide and the Chinese are the undisputable masters in carving it. Since the discovery of the rich jadeite deposits in Myanmar, nearly all the production has been marketed through mainland China and Hong Kong, in continuation of a jade (mainly nephrite) culture reaching back thousands of years. Today, the traditional way the Chinese appreciate "fei cui" (Cantonese) or "fei tsui" (Mandarin) jade clashes with the Western approach which is a purely scientific one: the mineral jadeite being an end-member of the isomorphous series of clinopyroxenes. The ability of jadeite to form solid solutions with other clinopyroxenes, combined with the chemical miscibility and retrograde transformations occurring during the retrograde metamorphism add to the complex composition of jadeite and jadeite related gem materials.

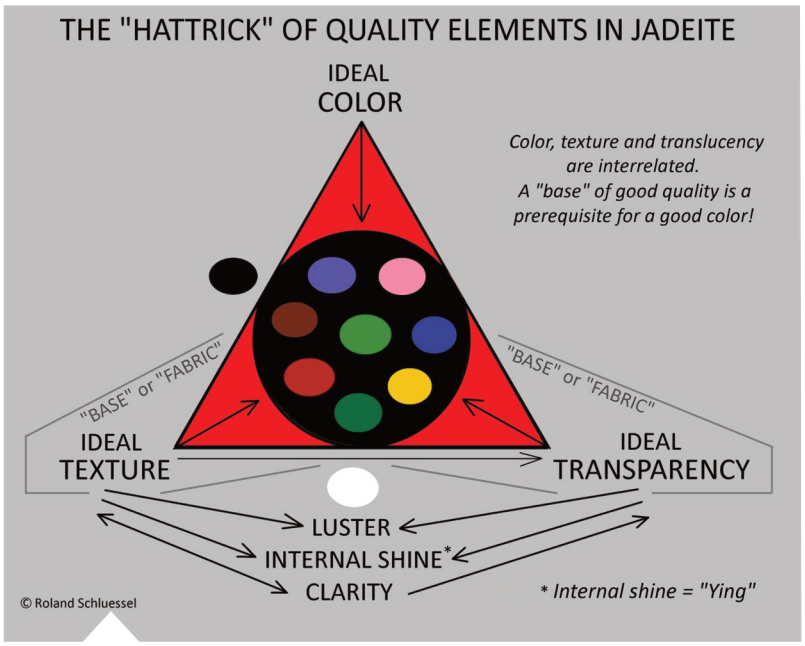


*FIGURE 1.*

The Chinese have developed such a strong affinity towards jade that jadeite specialists distinguish between several hundred varieties which are mainly characterized by their type of texture, degree of transparency, key color and color pattern; it is the combination of these features that define a jadeite variety. For example, the "moss-in-snow" variety holds some flecks of vibrant green on a white, near-opaque to opaque base. If this same color pattern is seen on a translucent piece of jadeite, it is a different variety. In the same way, jadeite experts distinguish between 15 quality grades of so-called "imperial jade," clarity grade not included. Thus, the author advises anyone who is not familiar with the Chinese terminologies and classification of jadeite varieties to avoid using them and applying solely descriptive visual features.

Most Westerners in the gemstone and jewelry business struggle with jadeite because it does not fit into the "4C" concept used for quality grading of most gemstones, particularly the transparent ones. Many gemologists attempt to integrate jadeite into this popular concept; however, the author recommends avoiding it for several reasons.

Jadeite varieties and sub-varieties are defined by a combination of texture and diaphaneity of the base, color and color pattern. Further, other "fei tsui" varieties are additionally defined by their mineral composition. Jade experts distinguish a multitude of jadeite varieties. There are hundreds of green jadeite varieties alone.

First, the base category must be identified regardless of its color; the base can be glassy, icy, oily, cooked lotus root-like, pea or porcelain. This step includes a range of grain size, a type of luster, and a range of diaphaneity. Secondly, the consistency of the texture must be assessed; it can range from uniform to very uneven. The quality of the base defines the degree of diaphaneity, which is also influenced by the color intensity, clarity and thickness of a jadeite item. Only once the quality of the fabric is assessed, one should go to the third step to describe the color(s) and color pattern(s) (Figure 1). The finest quality of the base produces the highest quality and enable an even color spread. The fabric also influences sig-

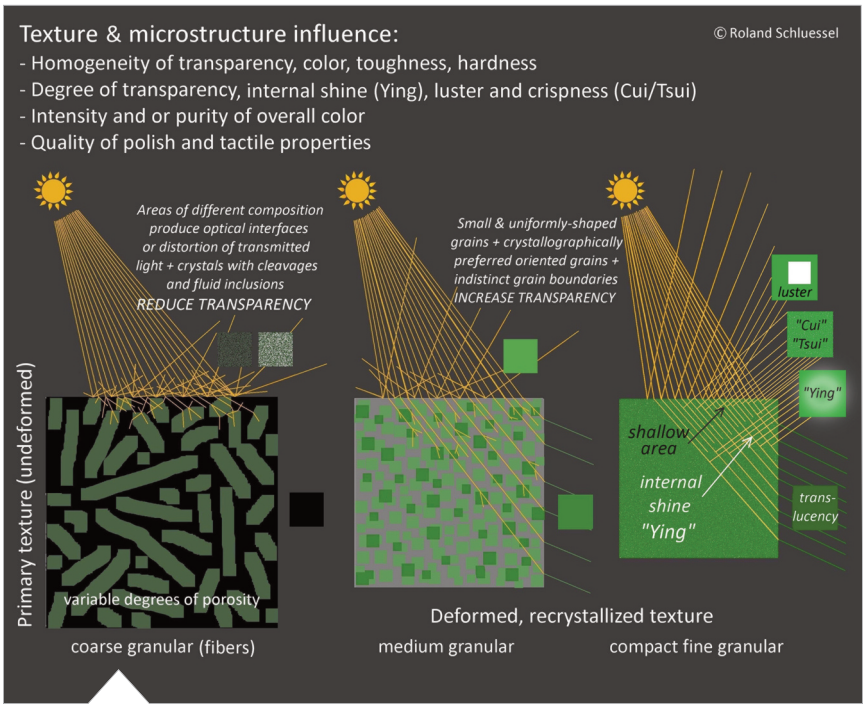


*FIGURE 2.*

nificantly the behavior of the light path through the stone and the resulting effects (Figure 2).

Jadeite can often be differentiated from other jade-like gem materials by the presence of the "cui" (Cantonese) or "tsui" (Mandarin) effect. The "tsui" is produced by diffraction of light in a shallow area below the stone's surface; if clearly visible, it is part of the characteristic crispy luster of jadeite. But, the finest qualities, especially the best "imperial jade" additionally produce an internal shine known as "ying" (Figures 2 and 3). This internal glow, which considerably increases beauty and value of jadeite is produced by light that penetrates deeper into the translucent to sub-transparent jadeite, where it is scattered by the fine granular texture. "Ying" means hero, outstanding, or outstanding person in Chinese; in this context, it stands for outstanding qualities in jadeite. The ying-effect is best observed perpendicular to the light source, in peripheral areas of well-shaped cabochons with good proportions and convex bottom part, or in beads. Thus, the prerequisites for this highly desirable effect are a high quality fine-grained base with a compact and even texture, a high degree of diaphaneity, and a very good polish.

The ying-effect and the color intensity are the main reasons why very high-quality jadeite should not exceed a certain size; this size corresponds to the maximum size the material being cut is still able to show the ying-effect without having its center darkened by a color that is so intense that it hinders translucency.

In "imperial jade" beads of exceptional quality, this size is approximately 18 mm. In jadeite items of high value, the transparency has a significantly stronger influence on the value than color.

When assessing the "purity" of jadeite, it should be differentiated between "clarity" and "cracks." Clarity accounts for the presence or absence of inclusions such as "pollens," dark mineral grains, and visible micro-shear zones. Note that blemishes that have been attributed to the texture quality should be disregarded during the clarity assessment. If fissures or fractures are present, whether open or healed, they should be judged separately because they can dramatically reduce the value of a jadeite item, and worse, making it factually unsellable. Blemishes that have been attributed to the texture quality should be disregarded during the clarity assessment.

In jadeite, ductile micro-shear zones or micro-shear bands are internal textural features that were caused at comparatively great depth during the stone's formation by shear stress, a lateral stress which caused tearing and smearing in the stone's body. Shearing is part of the gemstone-quality jadeite's formation where plasticity prevents fracturing; the material experiences high degree of deformation, reducing its grain size and interstitial spaces, and imposing a distinct preferred orientation. Despite micro-shear zones in jadeite generally resemble healed fissures or healed

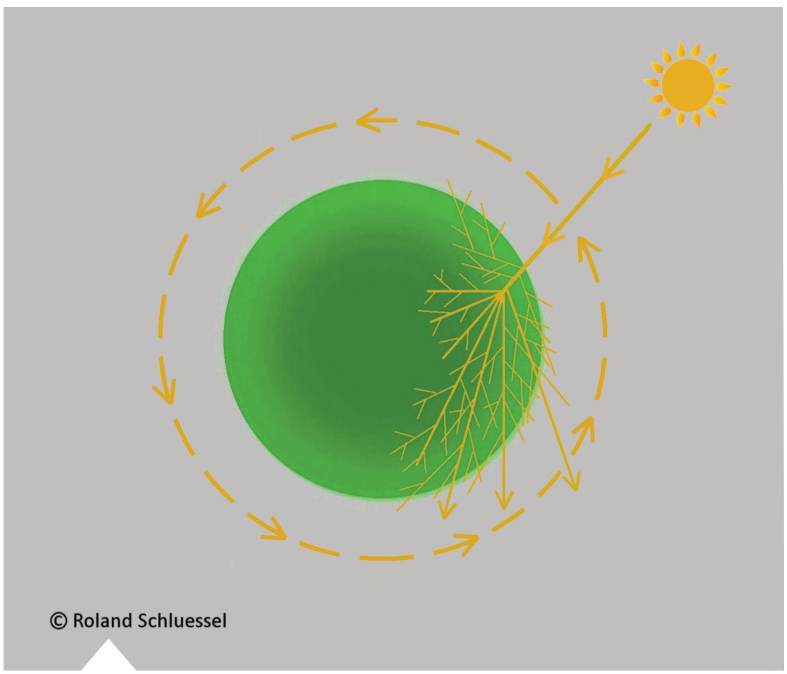


*FIGURE 3.* Ying-effect in a jadeite bead.

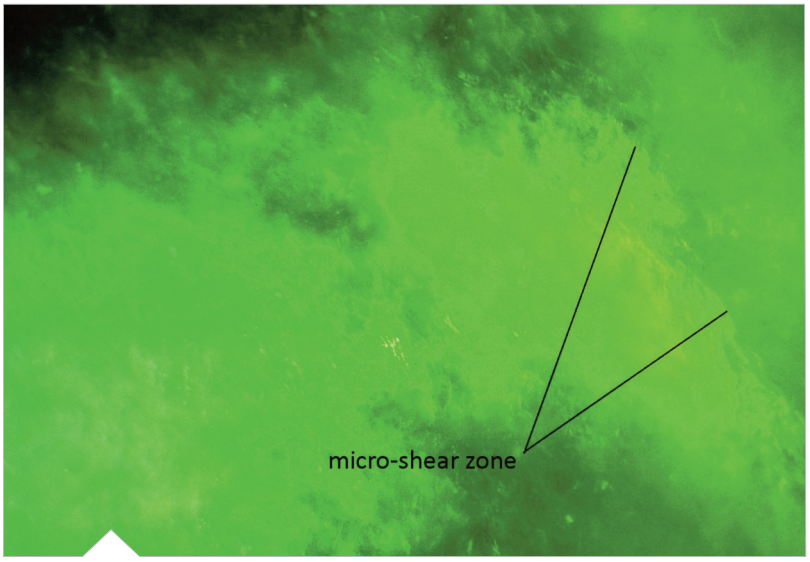


*FIGURE 4.* A micro-shear zone reaching the surface of a green jadeite cabochon. Magnification: 36X. Photo by Roland Schluessel.

cracks they should not be misrepresented as fissures or cracks, or as healed fissures or healed cracks. Healing is not possible since the material has not been previously fissured or cracked. Figure 4.

Jadeite occurs in a very wide range of colors, comprising pure colors, mixed colors, combinations of colors, multicolored and parti-colored with random or symmetrical color patterns. For Myanmar jadeite, these colors are generally classified into the following groups: green, purple, red to yellow, white and black to gray, and multicolor (at least 2 additional colors added to the color of the base). These color series not only reflect their visual appearance but to a certain degree, also their varying color origins. Blue, violet, lavender and pink Burmese jadeite belong to the purple group. Myanmar blue jadeite shows a distinct color shift towards purple when moved from daylight to incandescent lighting conditions; this differs from Mesoamerican jadeite where blue jadeite is considered as a separate color. "Icy" jade is translucent to semi-transparent colorless jadeite which differs from white jadeite only by the texture/diaphaneity of its base. Gray to black jadeite owes its color to increasing contents of dark mineral inclusions. Most jade that appears black in normal lighting conditions but dark green in strong transmitted light, are kosmochlor jade.

The appraiser faces multiple challenges to correctly value a jadeite item:

- Correct mineralogical identification.
- Treatment status.
- Assessment of all quality criteria and their relative influence on the value.
- Evaluation of premium factors such as historic aspects, artist and manufacturer, symbolism.
- Access to reliable reference prices and/or similar comparison items.

Due to the complexity of jadeite quality and value assessment, the author recommends a 5-step procedure for a reliable valuation of a jadeite item:

- Identification: gemstone species & treatment status (texture inspection; Raman and/or FTIR; report from gemological laboratory).
- First impression: Write down the value based on simple "guts impression."
- Quality grading: Carry out a systematic assessment of all quality elements, followed by a methodical valuation considering all value factors, including premium factors.
- Compare: Check the item with a similar jadeite of known value. Trade show, manufacturers, wholesalers, retailers, auctions (do not rely on internet and strongly altered images).
- Know your limits: Ask for a second opinion from a knowledgeable jadeite merchant. ◆

## REFERENCES

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