"Old Fei Cui of the Ming & Qing Dynasties" - What is it really? 破解近年市面上所謂"明清老翡翠"

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及拍賣平台。不少東西方消費者、網台以 及店家亦被其蒙騙,遭到損失。作者揭示 了鑑定這種B+C翡翠的有效和科學方法, 從而區分開天然翡翠及經漂色、染色和樹 脂充填的、經人工處理的翡翠。

At the Hong Kong International Jewellery Show in March 2019, a booth, actively promoted on site by actors and other performance artists, was seen to be selling a product that the vendors claimed to be "old fei cui from the Ming and Qing Dynasties". In reality it was acid bleached, dyed and resin impregnated fei cui (trade name: B + C fei cui). The pieces exhibited showed bright colours and good translucency. They included dazzling, beaded necklaces, bracelets, pendants, etc. They resembled high-end fei cui and,



Fig. 1 B+C fei cui (so called "old fei cui of the Ming & Qing Dynasties") B+C翡翠(所謂的"明清老翡翠")



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packaged as ancient fei cui from the Ming and Qing Dynasties, they were on sale at very high prices. Jade traders and people from Hong Kong and China with a real understanding of fei cui were in uproar. Subsequently, this same product appeared in retail stores, online retail sites and electronic auction platforms in the West. Many consumers in both the East and West have been deceived by this product as have retailers and online auction houses. All have suffered financial losses as a result. In this article, the author describes how effective visual inspection and gemmological testing instruments can be used to identify such material and thus unravel the question of what it really is.

Introduction

According to the Trade Descriptions Ordinance of the Hong Kong Customs & Excise Department, it is illegal to sell "B + C" fei cui as natural fei cui, and those who do so are subject to sanctions. Anyone with an understanding of what the properties and nature of both natural and treated fei cui are would recognise at a glance that such products were artificially bleached, dyed and resin impregnated. The novice buyer would not. Hong Kong has the reputation of being a "shopper's paradise" not least because it is a society governed by the rule of law where consumers should be able to trust in the authenticity of the products they buy. In this instance, falsely labelled products were sold openly at a jewellery exhibition hosted by the Hong Kong Trade Development Council, a government subsidiary. This has greatly damaged the image of Hong Kong as a fair and honest marketplace, negatively impacting the interests of consumers as well as the reputation of the industry. It is really unacceptable and intolerable.

Over the last 6-7 years I have often been asked to inspect B + C fei cui, presented with a similar historical story, that has been sent in to the Hong Kong Gems Laboratory for identification and certification by collectors from all over China. Such pieces usually come with stories and legends about the origin or the provenance of the goods. The most mysterious were pieces it was claimed were from the Eight Banners of the Qing Dynasty, an elite class of military families, in ancient China. I do not generally listen to any of these stories. Only the results of scientific testing have any relevance.



Fig. 2 Natural fei cui 天然翡翠

How to identify so-called "Old Fei Cui of the Ming & Qing Dynasties"? Visual Inspection

1. The colours are too bright. They look unnatural, and the colour distribution is wrong so that those who understand fei cui and jadeite jade can distinguish it from the colour distribution alone. Due to the varying geological conditions under which natural fei cui is formed, the colour distribution of each variety has its own natural pattern, and it cannot be random and unsystematic.



Fig. 3 Dyed material showing colour pigment along the cracks & crystal grain boundaries of B+C fei cui under magnification 放大鏡下的 B+C翡翠,染料沿裂紋及晶體邊沿聚積

2. Generally, the translucency of such pieces is good. However, the degree of translucency does not match the exhibit's texture and the structure of that specific variety. Vitreous fei cui has a fibrous, interlocking crystal structure. The crystal arrangement is directional. The structure of this material, however has been destroyed and distorted by acid treatment, so that it is loose. With a hand lens a typical spider web pattern, due to the open crystal grain boundaries, is usually visible, while in dyed material the colour follows the crystal grain boundaries.

Identification Using Instruments

Using infrared spectroscopy there will be characteristic absorption peaks confirming resin impregnation, and the visible light absorption spectrum can be used to identify the colour of the artificially treated pieces. The material being sold as "old fei cui of the Ming and Qing Dynasties" often comes with a "professional" certificate of identification, sometimes, under



Fig. 4 IR spectrum of resin impregnated fei cui (jadeite jade) 入膠硬玉質翡翠的紅外光圖譜



Fig. 5 IR spectrum of natural green fei cui (jadeite jade) 天然綠色硬玉質翡翠紅外光圖譜

the banner of the Chinese Academy of Sciences or other laboratories, which states that the piece has been proven to be free of resin by Raman spectroscopy. However, Raman spectroscopy is carried out using a tiny laser spot scanning area and the Raman beam scanning point can be aimed onto a resin-free point of the fei cui being tested with the deliberate intention of confusing and deceiving.

Infrared spectroscopy makes the treatment much easier to detect because the scanning area is much, much larger. This test, combined with the use of conventional gemmological identification instruments, will ensure that both natural fei cui and artificially treated fei cui will have nothing to hide.

The Standard Methods for Testing Fei Cui (Jadeite Jade) for Hong Kong HKSM/JJT-2006, issued by The Gemmological Association of Hong Kong Limited, (2006) also includes observation under long wave UV light. Resin treated material (B-as well as B+C fei cui) typically shows a distinct glow.



Under 365nm long wave ultra violet light 長波紫外光下

Fig. 6 (Left) natural fei cui is inert, while (Middle & Right) B+C fei cui show a distinct glow under long wave UV light λ =365nm

在λ=365nm紫外光燈下,(左)天然翡翠表現惰性;

(中、右) B+C翡翠則顯現明顯熒光反應



Fig. 7 Top: Light spectrum of natural fei cui. Bottom: Light spectrum of dyed fei cui 上:天然翡翠的吸收光譜;下:染色翡翠的吸收光譜

On the other hand, a light spectroscopy examination of fei cui coloured with green dye will display broad absorption at the red end of the spectrum and no individual Cr lines. There are many reasons to doubt the authenticity of this so-called "old fei cui of the Ming and Qing Dynasties". From an archaeological perspective, little fei cui has been found in ancient tombs dating from the Ming and Qing Dynasties. Nor were there so many cutting styles in jewels of these periods as there are in the collections sold under this misleading label.

Conclusions

High-end fei cui is expensive, so, inevitably, cheats will disguise low-end fei cui to resemble the high-end material. Using today's advanced technology, however, this material is easily identified by experienced gemmologists. Establishing the age of the product is another problem though - generally beyond the capacity of gemmologists. So, the cheats use history as packaging and high-tech as shields. It is a new trick in the game of deception that sees unethical antique merchants colluding with fraudulent gemmologists "*against professional ethics*" thus creating a resurgence of undeclared "B + C" jadeite jade in the market.

It is to be hoped that the jewellery industry and professional laboratories will continue to work together and to be brave enough to report such frauds, so that the consumers will not be deceived. Thus consumers will have confidence in fei cui and continue to maintain the healthy development of the jade market!

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