HUI PŌHAKU 'O HAWAI'I
Rock & Mineral Society of Hawai'i, Inc.

Meeting Times

MEETING
Wednesday
April 27, 2016

6:15-8:00 pm
Makiki District Park
Admin Building

NEXT MONTH
Mid-Year Mineral Auction

LAPIDARY
Every Thursday
6:30-8:30pm
Makiki District Park
2nd floor Arts and Crafts Bldg

MEMBERSHIP
DUE COSTS 2015
Single: $10.00
Family: $15.00

P.O. Box 23020
Honolulu, HI
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Precious Metals and Fancy Diamonds
By Dean Sakabe

We begin April with the topics of Precious Metals and Fancy Diamonds. A precious metal is a rare metallic chemical element of high economic value. That said the obvious precious metals being **Gold** and **Silver**. Other precious metals coming on the market, for mainly their jewelry uses are the following.

Platinum, use of this white metal goes back only several hundred years, versus thousands of years for gold. Despite being worked on by some skilled South American Indians over 1,000 years ago. It was not until the Spanish conquest of the New World during the fifteenth and sixteenth centuries did news reach Europe of this new metal. The Spanish first considered it a nuisance because it interfered with their gold mining activities. Platinum's high melting point was noted as it would not melt by fire or by any other Spanish means. Platinum was also heavier than gold and virtually impossible to corrode with gases or chemicals. In 1751 platinum was recognized as a newly discovered element.

10.12 ct Fancy yellow pear shape. This illustrates the effect a fancy shape can have on intensifying the color in a yellow diamond.

In the early 19th century new refining techniques increased platinum's availability. It was soon being used in gun parts, sophisticated batteries and fuel cells, the production of caustic chemicals, and the purification of hydrogen. This was in addition to its use in very high end jewelry.

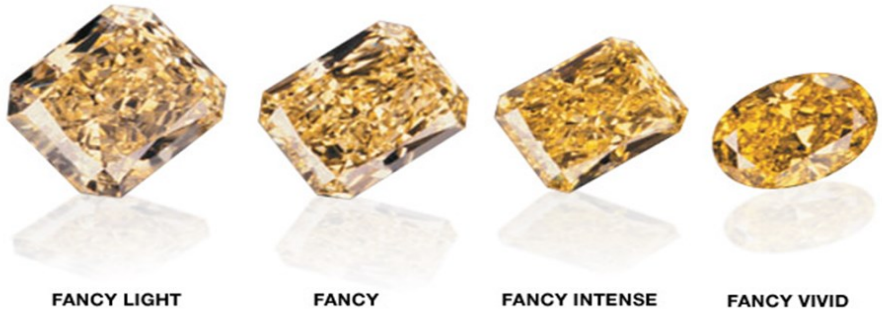
Palladium is a member of the Platinum Metals Group, also known as the Noble Metals. "Native platinum" refers to the natively occurring platinum, which is not actually pure platinum at all, but rather a natively alloyed mix of platinum group metals including palladium. In 1801, William Hyde Wollaston was able to isolate palladium from platinum. By dissolving native platinum in aqua regia (a mixture of hydrochloric and nitric acid). He named it after Pallas, the ancient Greek goddess of wisdom whose name had also been recently lent to the second asteroid ever discovered.

Precious Metals and Fancy Diamonds

It took until they 1970's for palladium's significance to be recognized. The fight against global pollution owes a lot to this unique metal, the use of Palladium really took off in the 1970s when the demand for catalytic converters, in which its remarkable properties play a key role increased as automobile emission standards were introduced in the developed world. As these standards were tightened and applied globally in the 90s, demand for palladium expanded enormously.
Palladium is lighter and less dense than platinum, which also means that the jewelry is not as heavy as Platinum. It is also about 95% pure, so it retains its inertness, thus will not tarnish and hypoallergenic.

Rhodium is another member of the platinum group metal. It is silvery-white, hard, and fairly inert. In recent years, rhodium became one of the most expensive of the precious metals. Rhodium was isolated from platinum ore in 1804 by English chemist William Hyde Walliston, who had discovered palladium the same way two years earlier. After removing platinum and palladium from the ore, he was left with a reddish salt that yielded the new metal. Rhodium is named from the Greek word for "rose". Rhodium went onto obscurity until the advent of catalytic converters, and paired with Palladium, became indespensible.

Rhodium not used to make jewelry, as it is a brittle metal.. However it is an excellent metal to plate other metals, because of its white, highly-reflective finish, hardness, and corrosion resistance. It is also hypoallergenic, and will prevent yellow and white gold from leaving a greenish tinge on the skin.



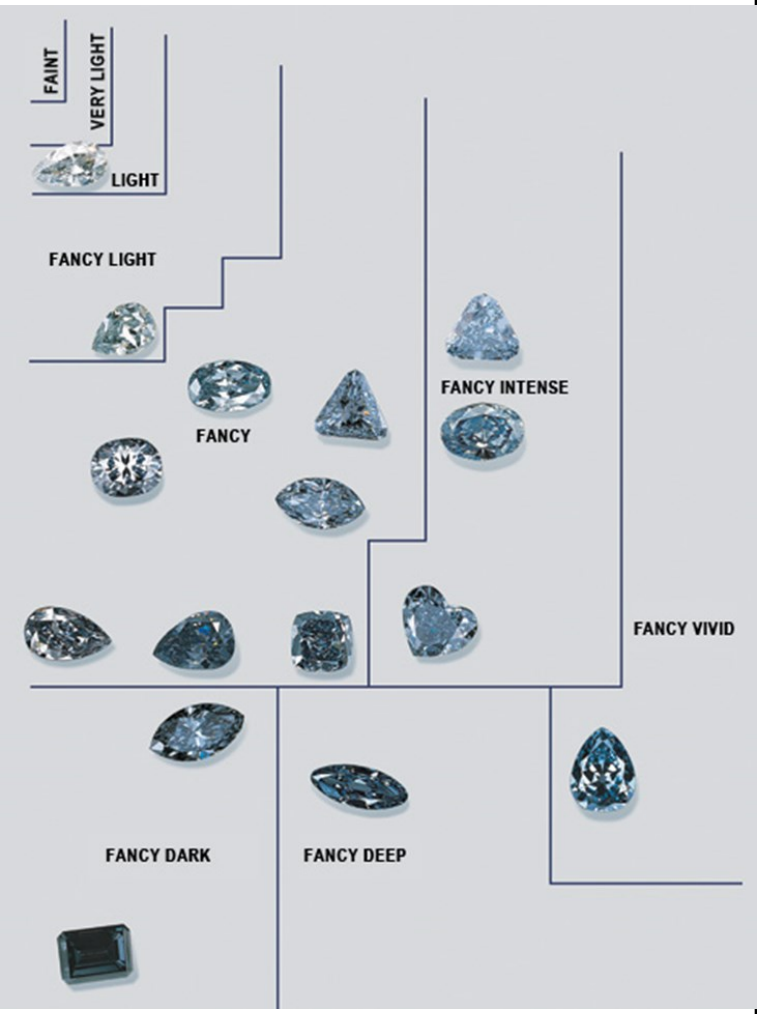
Fancy Diamonds, These are diamonds outside of the normal color range. The rarest and most valuable colors are reds, pinks, blues, and greens. In all cases, even very slight color differences can have a big impact on value.
Compared to fancy yellows and browns, diamonds with a noticeable hint of any other hue are considerably more rare. Even in light tones and weak saturation, as long as they show color in the face-up position, they qualify as fancy colors. Red, green, and blue diamonds with medium to dark tones and moderate saturations are extremely rare.

Fancy color diamonds have a range of color strength with the intense and vivid colored diamonds being at the top. Diamonds with red or reddish colors are extremely rare and possess the highest value. Pure pinks are more popular than diamonds that are purplish, orangy, brownish, or grayish.

Blue diamonds are also rare. They generally have a slight hint of gray, so they're rarely as highly saturated as blue sapphires. Their color is caused by the presence of boron impurities—the more boron, the deeper the blue

Fancy green diamonds are typically light in tone and low in saturation. Their color often appears muted, with a grayish or brownish cast. In most green diamonds, the hue is confined to the surface, and rarely extends through the entire stone. This is why diamond cutters try to leave as much of the natural rough around the girdle as possible. Green diamonds get their color when radiation displaces carbon atoms from their normal positions in the crystal structure. This can happen naturally when diamond deposits lie near radioactive rocks, or artificially as a result of treatment by irradiation.

Brown is the most common fancy diamond color and also the earliest to be used in jewelry. Second-century Romans set brown diamonds in rings. In modern times, Brown diamonds has taken a while to become popular. Brown diamonds were typically considered good only for industrial use until the 1980s, when abundant quantities of them began to appear in the production of the Argyle mines. The Australians fashioned them and set them in jewelry. They gave them names like "cognac" and "champagne." The marketing worked, and brown diamonds are found in many medium-priced jewelry designs today.



Yellow diamonds are the second most common fancy color. Yellow diamonds are usually marketed as "canary diamonds." While this isn't a proper grading term, it's commonly used to describe fancy yellow diamonds.

Until the late 1990s, there was not much demand for black diamonds. However they were being used in jewelry, as contrasting colors with tiny colorless diamonds in pavé settings, and slowly started to gain a following.

There are fancy white diamonds. These have a milky white color. Sometimes white diamonds are cut to display beautiful opalescent flashes of color.

Finally there are gray diamonds. Most of these contain a high level of hydrogen as an impurity element, which is most likely the cause of their color.

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Mahalo to Markus for establishing our *Rock Face*!

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Newsletter Editor

The Rock & Mineral Society meets on the 4th Wednesday of each month (except for adjusted dates in November and December) at the Makiki District Park, 6:15-8 pm. Enter from Keeaumoku Street. Parking is free but limited.

The Newsletter is published monthly, some days prior to the meetings and is distributed in electronic format by email (Adobe Acrobat PDF file attachment). Printed copies are "snail" mailed to those who do not have email. The electronic format usually contains full-color images; the print version may be limited to B&W due to reproduction costs.

DOOR PRIZES

Please note that we have instituted door prize drawings at our monthly meetings. Because of Hawaii's gambling laws, these drawings cannot be conducted in the common "raffle" format where tickets are sold. Rather, each *paid* member attending the meeting will receive a drawing ticket upon request. A voluntary donation of $1.00 is requested and encouraged. Drawings will be conducted at the end of the meeting with available prizes awarded in random order. You must be present to win. Please remember: if you win a prize, please bring one to the next meeting. This helps to keep our drawings going. Thank you.

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