

PEARL VARIETIES

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Pearls are a vast subject worthy of years of study. There are nacreous and non-nacreous pearls, each with subcategories of varieties. Prices, colors, qualities, sizes are seemingly endless and it takes great effort to learn about all the possibilities. Here, we take a closer look at the categories.

When planning this article, I decided the sensible place to start would be a simple concise definition of pearls and explore from there. The dictionary definitions were simple, the Oxford English dictionary defines a pearl as, “A hard, lustrous spherical mass, typically white or bluish-grey, formed within the shell of a pearl oyster or other bivalve mollusk and highly prized as a gem.” The American Merriam-Webster defines pearl as, “A dense variously colored and usually lustrous concretion formed of concentric layers of mother-of-pearl as an abnormal growth within the shell of some mollusks and used as a gem.”

The concise gemological definition was much harder, neither Gem-A nor GIA provided me with a snappy one-liner, and looking to CIBJO I got reams of intertwined and cross-referenced definitions. It seems in gemological terms that there is no “simple” definition, and scrutinizing the dictionary definitions they do not align with the CIBJO definitions of pearls entirely.

So, what is a pearl? After much reading and unravelling of the CIBJO tome, I tried to distil the many paragraphs down to what I felt was a sensible and simple definition, and came up with this. *A pearl is a concentric formation of conchoilin and/or calcium carbonate produced by a mollusk.*

Within this simple definition lies a myriad of possibilities. The Oxford English dictionary is wrong on a few counts; pearls do not need to be spherical, nor are they always produced by bivalve mollusks, and depending on how you define color and something being typical, it could be argued that they are not necessarily typically white or bluish-grey either. Merriam-Webster seems much closer with their broader definition, although it appears to cover only *nacreous* pearls.

In gemological terms we have a number of ways of classifying pearls. Type of water where produced: Salt water or fresh water. Nacreous or non-nacreous: Nacreous are those that are formed with an outer layer of nacre; layers of aragonite (calcium carbonate) platelets bound together with conchoilin (a complex scleroprotein). Non-nacreous are produced without an outer layer of nacre, formed solely from layers of cal-



FIGURE 1. Abalone pin. Courtesy of Anthony Lent.

cium carbonate. Natural or cultured: Natural defined as having no human intervention. Cultured pearls as a result of human processes and farming. Unattached or attached formations: Unattached formations are cyst pearls. Attached pearls can be on the host shell; blister or mabe pearls. Within these categories we then further classify by color, shape, and size. We check for, and hopefully disclose, treatments of which there are many. And finally, we apply grading criteria to be able to describe, appraise and value pearls.

It is more than a life's work to study and describe pearls, and there is so much more to pearls than the creamy white string your grandmother wore with a twinset. They are worth ex-

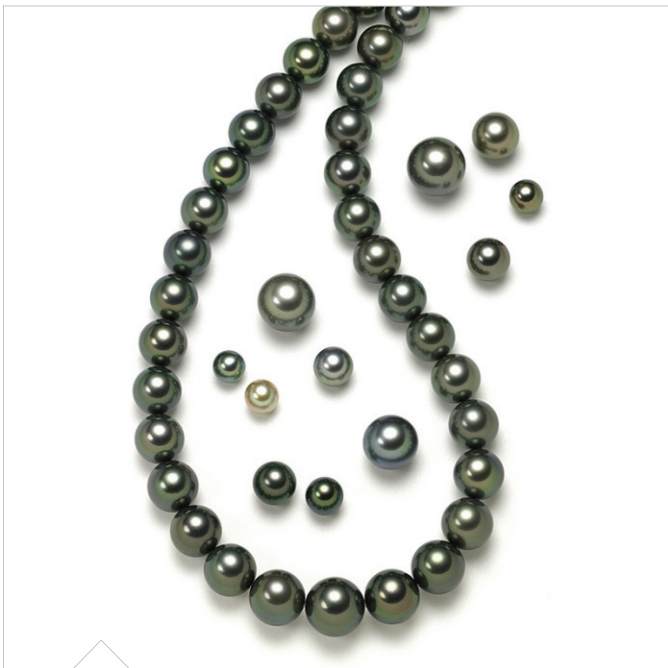


FIGURE 2. Tahitian pearls showing excellent lustre in range of grays. Photo courtesy of and copyright A&Z Pearls, Los Angeles, California.

ploring and educating yourself and your customers about.

NACREOUS PEARLS

By far, the most common type of pearl on the market are nacreous. These pearls are documented in history as far back as 2200 BC. Nacreous pearls are sub-divided into pearls produced by marine or saltwater mollusks, usually oysters and those produced by freshwater mollusks, usually mussels. Natural saltwater pearls are still fished in the Persian Gulf, the Central Americas, and the Cook Islands among others. Natural freshwater pearls used to be fished for in most European countries and are now still rarely fished for in Scotland and Mississippi among other localities. While I am not going to cover natural saltwater pearls in any detail, I want to look at just one particularly rare and unusual natural nacreous pearl that is found in a gastropod (snail), abalone pearls.

Abalone Pearls

These pearls are fished mainly in the seas around Australia, New Zealand, but also Japan, Mexico, Korea, South Africa, and in the U.S., California, Oregon, and Alaska. Sizes vary from a few mm up to a massive 125mm, the larger sizes are rarer. They are beautifully multi-colored and iridescent in a range of grey, blue, green and purple body colors. These pearls are almost always baroque, commonly a horn or shark tooth shape, although round or symmetrical shapes can be found but rarely. These pearls are usually hollow and so can be very fragile. Care must be taken while setting or wearing them. Figure 1.

While we do have natural nacreous pearls as described



FIGURE 3. Bead nucleated, freshwater cultured pearls up to 10mm (Edison brand) natural exotic colours. Photo courtesy of and copyright Betty Sue King, King's Ransom.

above, what we mainly see today in the nacreous pearl market are cultured pearls. Since the 1920s, cultured pearls have become a commercial product thanks to Mikimoto's (and others) pioneering work in the field. Before this time, the only pearls available were natural pearls. They were, and still are, considerably more costly than the farmed versions. So much so, that in 1917 Pierre Cartier famously exchanged a double strand row of pearls for their 5th Avenue location in New York. The four main commercial types of cultured pearls are as follows.

Akoya Cultured Pearls

Akoya are produced mainly in Japan and China, ranging in size from a few mm to 11mm, averaging around 6-8mm. These pearls are produced with a bead in the center and occur in a range of white to cream body colors with pink, yellow and blue hues, and pink or green overtones. They are mainly round, or off round, but can be semi-baroque or baroque (shapes with an uneven, freeform or "organic" outlines).

South Sea Cultured Pearls

South Sea cultured are produced in Australia, Indonesia, Philippines and Myanmar (formerly Burma), ranging in size from 8-20mm, averaging around 12-14mm. These pearls are produced with a bead in the center and occur in a range of white, cream and silver body colors with yellow, orange or blue hues, and pink, green or blue overtones. They are mainly symmetrical oval, button or drop shapes, with about a third spherical or off round, but can be semi-baroque or baroque, and can show circling (circular ridges around the pearl).

Tahitian Cultured Pearls

These pearls are produced in the Islands in French Polynesia, notably Tahiti, ranging in size from 9-14mm, averaging around 9-10mm, these pearls are produced with a bead in the center, and occur in a range of black, grey and brown body colors,



FIGURE 4. Conch pearls showing desirable pink color and characteristic flame structure. Photo courtesy of and copyright of Conch Pearls Ltd.

with blue to green, purple to yellow to green hues, and pink, green or blue overtones. They are around 40% round or near round, 40% semi-baroque or baroque, the rest oval, button or drop shapes, but can be semi-baroque or baroque, and can show circling. Figure 2.

Freshwater Cultured Pearls

Produced mainly in China but also in the U.S. in freshwater lakes and ponds, these pearls come in a wide range of sizes usually from 4-20mm, often produced without a bead in the center but larger sizes have been produced nucleated. They occur in a range of white or cream body colors, with yellow, orange pink and purple hues, and pink, green or blue overtones. They occur in the widest range of shapes round or near round, oval, button or drop shapes and semi-baroque or baroque, and frequently show circling. Figure 3. Japan's Lake Biwa is probably the best-known freshwater pearl, albeit there is no appreciable production today. Chinese cultured pearls currently dominate the cultured pearl market.

NON-NACREOUS PEARLS

Non-nacreous pearls are still somewhat of a connoisseur or collector's pearl. Not seen frequently in mainstream jewelry, they are more often found in high end, couture and designer jewelry. Not surprisingly as most of the non-nacreous pearls are rare, valuable and natural. While cultured non-nacreous pearls are known, they have yet to become a truly commercial proposition.

Non-nacreous pearls can be sub-divided into pearls produced by gastropods and those produced by bivalve mollusks. They are all marine pearls.

Gastropod: Conch Pearls

These are fished mainly in the Caribbean Sea through to Bermuda. Only 1 in 10,000-15,000 Queen Conch shells contain a pearl and only 10% are considered gem quality, so you may need 100,000 to 150,000 shells to find a gem. Pearls over 10 ct are rare but have been known to grow to 45 ct and larger. They occur in a range of white, yellow, brown and pink colors with the pink being the most desirable and valuable. They frequently show a desirable iridescent "flame structure" optical effect due to the structure of the aragonite that makes them up. They are mainly oval, or off round; spherical pearls are highly sought after for jewelry but rarer and they can be drop shape. Care must be taken as these valuable pearls can be subject to fading in UV or sunlight. Figure 4. A decade ago, successful culturing of conch pearls was achieved by Florida Atlantic University's Harbor Branch Oceanographic Institute. More than 200 pearls were produced during their research. However, it is not currently believed that commercial production is in operation.

Gastropod: Melo Pearls

Fished mainly in the seas around Myanmar, Malaysia and Vietnam, these pearls are generally about 10-25mm, although smaller and larger sizes are available. They occur in a range of white, yellow, brown and orange colors with the orange being the most desirable and valuable. They also show "flame structure." They are mainly round or off round, but also oval. Again, care must be taken as these can be subject to fading in UV or sunlight. Figure 5.



FIGURE 5. Melo pearls from Burma. An exceptional group of Burmese melo pearls, 13.19 ct, 38.05 ct, 9.30 ct and a pair, 5.10 ct tw. Photo courtesy of and copyright of Mia Dixon, Pala International.

Bivalve: Scallop Pearls

These are fished in Central America, Mexico and North Atlantic. They are essentially a byproduct of the food industry because they so rarely form in the mollusk. Pearls range in size from a few mm up to a few cm. They occur in a range of white, yellow, and brown body colors, but more commonly a deep maroon or plum color, with "flame structure." Usually round or off round, ovals, drop shapes and baroque



FIGURE 6. Group of scallop pearls showing variation in shape and color.
Photo courtesy of and copyright of Pacific Coast Pearls.

pearls are also produced. Again, they can fade in UV or sunlight. Figure 6.

Bivalve: *Tridacna* (Giant Clam) Pearls

Fished in the Philippines and China, again mainly a byproduct of the food industry. The world's largest known pearls come from the *Tridacna Gigas*, and they can occur from around

8mm to huge sizes. The current record is a 34kg pearl. They occur in a range of white to yellow, resemble porcelain and show "flame structure." They can also show a crazing under the surface termed "batik" by dealers. Usually round or off round, ovals, drop shapes and baroque pearls are also produced. If you want to buy or sell *tridacna* pearls it is worth noting they are listed as an Appendix II type species with CITES, and as such are subject to trade and import/export restrictions. Also, be aware that many of the large pearls circulating in the investment or collectors' realms and that multi-million-dollar values associated with them are actually not an actual pearl of any type, but instead the polished hinge of giant clam shells.

CONCLUSION

As can be seen from this whistle stop tour of some of the pearls available, some pearls are incredibly rare and hugely valuable, while some pearls are mass farmed, very low price and essentially are a good way to buy a cheap string! There is a pearl to suit every taste and budget and I hope it has increased your interest in the subject as it has certainly reignited mine. This article was being finished while on my way to Tucson, off to buy some non-nacreous pearls to add to my collection!

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