

Focus On: Pearls

For more than 4,000 years, man has prized pearls. They are considered the world's oldest collected gem. As far back as 2300 BC, records indicate that pearls were the prized and exclusive possessions of Chinese royal families. In ancient Rome, pearls were worn as a symbol of wealth and prestige – in fact laws existed to prohibit the wearing of pearls by those not deserving of them.

With such a history of exclusivity and rarity, is it any wonder pearls still draw such attention and envy to this day.

Cultured Pearls

Cultured pearls are real pearls, grown organically inside of oysters in exactly the same way as natural pearls. The difference is that the pearl farmer intentionally stimulates the development of the pearl by manually inserting a “nucleus” into the oyster. The rest of the process remains the same, but in this way, the formation of the pearl is no longer left solely to the chance of a random irritant lodging itself in the oyster. Furthermore, rather than pearl divers hunting, often in vain, for the elusive, naturally formed pearls, pearl farmers could now cultivate pearls and pearl lovers throughout the world could reap the benefits. The only way to distinguish a cultured pearl from a natural one is by x-ray to reveal the “nucleus”.

Breeding History

Modern-day cultured pearls are the result of discoveries made in the late 19th and early 20th centuries by Japanese researchers. Although some cultures had long been able to artificially stimulate freshwater mollusks into producing a type of pearl, the pearls produced in this way were generally hemispherical, rather than actual round pearls. In the early 1900s, a number of Japanese researchers independently developed the techniques to manually “nucleate” oysters in order to create round pearls. This revolutionized the pearl industry. It allowed the reliable cultivation of large numbers of pearls.

Of these researchers, it was the son of a noodle maker who perfected and patented the technique. Kokichi Mikimoto combined the various technical processes with business acumen and worldwide flair. The man and the eponymous Mikimoto Pearl is credited with almost single-handedly having created the worldwide cultured pearl industry.

Breeding & Nucleation

The first step in pearl production or culturing is to obtain oysters to be nucleated. In the early days of the cultured pearl industry, oysters were simply collected from the sea. Although some farmers continue using this method today, many breed their own oysters. To do this, the pearl farmer collects oyster sperm and eggs from high-quality oysters already on the farm. The sperm are used to fertilize the eggs, and so create a new generation of oyster larvae.

The larvae are allowed to float freely in the water, under controlled conditions, until they are a few weeks old. In the wild, the larvae would then attach themselves to a rock or similar object, so the farmers provide “collectors” for this purpose. Over a period of a few months, the larvae develop into baby oysters. They are generally then moved into a separate nursery area of the farm. Here they are tended for around 1-2 years, until they have grown sufficiently large to be nucleated.

Two basic methods of nucleation are used. Saltwater oysters are generally nucleated using a “bead”, prepared from mother-of-pearl. First, the bead is surrounded by a small piece of mantle tissue taken from a donor oyster. The bead and tissue are then implanted into the oyster's gonad. The bead serves as a mold, or nucleus, around which the pearl develops. The resulting pearl will contain the bead at its center and will tend to develop in the same general shape as the original bead. The bead can be detected in the final pearl by x-rays and is the only difference between natural and cultured pearls.

After nucleating, the oysters are given a few weeks to recover from the surgery. During this time, some of the oysters may reject and expel the implanted nuclei; others may become sick or even die. Most, however, will fully recover. The oysters are then placed in cages or nets and moved into the oyster bed, where they will be tended as the pearls develop. Depending on the type of oyster, this process can require anywhere from a few months to several years.

After the pearls have been allowed to develop fully, they must be harvested. After the pearls are extracted from the oysters, they are washed, dried, and sorted into general categories. Sometimes, the pearls are polished by tumbling in salt and water.

Akoya Pearls

Akoya pearls are cultured in the *Pinctada fucata martensii*, also known as the Akoya oyster. This mollusk is found and farmed primarily in Japan, China, Vietnam, South Korea and Australia.

Renowned for their luster and shine, Akoya pearls are often considered the “classic” pearl. They are generally white or cream colored, with overtone colors of rose, silver, or cream.

Since the Akoya oyster is the smallest pearl-producing oyster used in pearl culture today, Akoya pearls also tend to be small, ranging in size from about 2 to 11 millimeters. But, this smaller size also lends them to be the most consistently round and near-round pearls, making them ideal in terms of matching for multi-pearl jewelry such as strands and bracelets.



Tahitian Pearls

Tahitian pearls are produced in the black-lipped oyster *Pinctada margaritifera*. This oyster is quite large – sometimes over 12 inches across and weighing as much as 10 pounds – which often results in a much larger-than-average pearl.

Although Tahitian pearls are thought by many to be a product of Tahiti, this is not exactly true. Tahiti does not have any pearl farms located on the island; it is simply the commercial center and trading hub for the bulk of the industry. The farms are scattered throughout French Polynesia, as far east as the Gambier Islands, and beyond French Polynesia to the west into the Micronesian Islands. Australia, the Seychelles and Vietnam have also all cultured pearls from the *Pinctada margaritifera*.

The pearls are unique because of their natural dark colors. Most “black” Tahitian pearls are not actually black, but are instead silver, charcoal, or a multitude of colors with



the dominant color being green. Truly black pearls are among the most beautiful pearls in the world, and are extremely rare.

Additionally, not only are the pearls of the black-lipped oyster beautiful, but the mother-of-pearl inner shell is also extremely attractive. In fact, by the early part of the 20th century, before conservation and repopulation efforts began, the oyster had almost been hunted to extinction for its shell alone.

South Sea Pearls

A South Sea pearl is pearl produced by the *Pinctada maxima* mollusk. They are currently cultured in areas throughout the Indian and Pacific Oceans, primarily in Australia, the Philippines and Indonesia.

South Sea pearls are among the largest commercially harvested cultured pearls in the world. The average size of a South Sea pearl is 13mm, with most harvests producing a range of sizes from 9mm to 20mm. There are a number of reasons that South Sea pearls can grow to such large sizes, including: the large size of the *Pinctada maxima*, the length of time the pearl is left to grow in the oyster, and most importantly, the oyster's environment.

The warm, clean, plankton-rich waters of the South Sea speed the oyster's metabolism, so it is able to create and deposit nacre around the nucleus at a much quicker rate. Since the growth period for South Sea pearls is two years, as compared to an Akoya's 9-16 month growth period, the higher nacre output over a longer period accounts for the larger size.

Additionally, the rapidly deposited nacre and warm waters of the South Seas contribute to the pearls having a unique, satiny luster that is unmistakable. South Sea pearls also have a subtle array of colors; typically white, silver, and golden, that are rare in other pearl types.

Pearl Necklaces

The pearls used in a necklace can all be of the same size; or they can be graduated, with a larger pearl in the center and successively smaller pearls running back on each side to the clasp. Whichever style is chosen, good matching of the pearls is important, both for aesthetic reasons and for the highest value.

Pearl necklaces come in a wide variety of styles and sizes, they include (in order of length):

- Bib: Several strands of pearls of varying lengths layered to form a single necklace.
- Collar: Consists of multiple strands of pearls worn high on the neck. Approximately 12-13 inches long.
- Choker: Similar to a collar, but is worn somewhat lower on the neck. Approximately 14-16 inches long.
- Princess: Essentially the “classic” length for a pearl necklace, lying slightly below the neck. A versatile style, which can be worn with many different styles of neckline. Approximately 17-19 inches long.
- Matinee: Traditionally worn for semi-formal occasions, works well with suits and dresses. Approximately 20-24 inches long.
- Opera: Generally worn at formal occasions with evening dresses. The pearls should fall below the bust line. To be worn during the day in less-formal settings, the strand can be doubled over. Approximately 30-36 inches long.
- Rope: This is the longest of all pearl necklace styles. It can also be doubled, as well as knotted. Some rope necklaces have multiple clasps, which allow it to be broken down into shorter strands. More than 36 inches long.

Pearl Grading

No common industry-wide standard exists for the grading of pearls yet. The most commonly accepted system in use today is the AAA-A scale. This system grades pearls on a scale from AAA to A, with AAA being the highest grade. This grading scale is common to Freshwater and Akoya pearls only, but is accepted by many with South Sea and Tahitian pearls as well.

AAA: The highest-quality pearl, virtually flawless. The surface will have a very high luster, and at least 95% of the surface will be free from any type of defect.

AA: The surface will have a very high luster, and at least 75% of the surface will be free from any type of defect.

A: This is the lowest jewelry-grade pearl, with a lower luster and/or more than 25% of the surface showing defects. In many cases, if the pearl is being mounted into a piece of jewelry, it can be mounted so that the defects are hidden.

Care of Pearls

Pearls are the world's only organic gem and are composed of calcium carbonate; this means special attention is required to ensure pearls will stay beautiful and last a lifetime.

Because pearls are an organic gemstone, they are somewhat different from other gemstones and precious metals. They are softer and more delicate, and they can therefore be more easily scratched, cracked, and damaged. In addition, substances such as perfume and hair spray – and even natural body oils and perspiration – can dull pearls' luster or cloud their brilliance.

It's a good idea, for example, to apply perfume, hair spray, and other cosmetics *before* putting on your pearls. In this way, you can minimize the amount of these products that comes into contact with the pearls. After wearing your pearls, wipe them with a soft damp cloth to remove any traces of cosmetic products or body oils. Wash the pearls periodically with a mild soap and a soft cloth, to remove any accumulated build-up.

Because of their delicacy, pearls should be stored separately, away from hard jewelry items, to prevent scratches or other damage. If possible, store them wrapped in soft cloth or in a soft-lined container, pouch, or jewelry box.

To prevent strand breakage, it's a good idea to have your pearls restrung periodically – perhaps once a year or so if you wear them often. Knotting the strand between each pearl will prevent all of the pearls from falling off the strand in the event the strand breaks. Also, knotting prevents the pearls from rubbing against one another and causing damage. A little bit of care can go a long way toward ensuring that your pearls remain safe and bright for years to come.

