JEWELLERY WORLD

RETAILERS' PEARL COURSE

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Photo credits to: Rudy Weber, South Seas Pearl Consortium, Perles de Tahiti, Devino Pty Lid and Andy Muller, author of *"Cultured Pearls - The First Hundred Years"*
Anyone may participate in the Pearl Course, which is designed for self-study at the user's own pace. Simply read each lesson and answer the questions at the end of the course. Successful candidates will receive a certificate upon completion of the course.

Part 1
HISTORY OF PEARLS

LONG AGO, PEOPLE BELIEVED that pearls were moonbeams that fell into the ocean and were swallowed by oysters. Although we now know that this is not true, pearls are still synonymous with romance, purity and sensuality.

No one really knows who the earliest people to collect and wear pearls were, although it is acknowledged that perhaps an ancient fish eating tribe off the coast of India discovered the first saltwater pearls while gathering oysters for food.

Persia also has an association with pearls that stretches back thousands of years; with the Louvre in Paris being home to a necklace once owned by a 4th century B.C. princess. In the nearby kingdom of Babylon, evidence of mother-of-pearl is even older. Mother-of-pearl inlays and decorations uncovered from Bismaya's ruins date from 4500 B.C. Across the Red Sea in Egypt, decorative mother-of-pearl was used at least as far back as 4200 B.C, while pearls themselves seem to have been introduced much later. Roman emperors too were avid collectors of pearls; folklore has it that the reason for Caesar's invasion of Britain was his hope of finding pearls.

His Imperial Majesty, Mohammed Ali, Shab of Persia,

Throughout most of history a natural pearl necklace was a treasure of almost incomparable value, in fact the most expensive jewellery in the world. Now we see pearls almost as accessories. Before the creation of cultured pearls in the early 1900s, natural pearls were so rare and expensive that they were reserved almost exclusively for the nobility and the very rich.

Pearls have also played a pivotal role in the most celebrated banquet in literature. To convince Rome that Egypt possessed a heritage and wealth that put it above conquest, Cleopatra wagered Marc Anthony that she could give the most expensive dinner party in history. The Queen then crushed one large pearl from a pair of earrings, dissolved it in a goblet of wine, and drank it down. Astonished, Mark Anthony declined his dinner (the matching pearl) and admitted she had won.

Mrs. George j. Gould, circa

Fine natural pearls are quite rare. The oldest known pearl beds were discovered in the Persian Gulf, along the coast of Iran, Saudi Arabia, Kuwait and Qatar; and in the waters of the Gulf of Mannar between India and Ceylon (now Sri Lanka). The waters along the coast of Japan and the rivers of China, northern Europe, and the Mississippi River and its tributaries in North America also have been important diving centres for pearls, since time immemorial.

Koichi Mikimoto, the son of a Japanese noodle maker, who is largely attributed with developing methods for culturing pearls, is considered the founder of the pearl culturing industry. Since this revolutionary breakthrough at the beginning of the 20th Century, an empire of pearl-producing centres have developed around the world.

Part 2
WHAT IS A PEARL?

A PEARL IS A LIVING GEM, and each pearl is a miracle of nature. A pearl is the accumulation of a slightly translucent material, called nacre or mother-of-pearl, similar to the lining found on the inside of nacreous shells. This is what gives a pearl its unique lustre and iridescence. It takes thousands of very thin layers of this nacre to make a single pearl. It is the composition, structure, thinness and evenness of these microscopically thin pearly layers that distinguishes a high-quality pearl worth thousands of dollars from another worth a great deal less. It is a remarkable feat of nature that a living oyster produces such an exquisite work of art.

Natural pearls

Before the depletion of natural pearl beds, about a century ago, all pearls that were discovered were natural pearls. Today natural pearls are very rare, and are often sold at auctions in New York, London and other international venues at investment prices.

Natural pearls are, by definition, all types of pearls formed by an accident, without human intervention. They have no implanted nucleus! Natural pearls are the product of chance, with a beginning that is an irritant such as a burrowing parasite. With no shell sphere as its nucleus, the natural pearl is rarely round or of uniform size.

Cultured pearls

Cultured pearls are formed when humans intentionally introduce an irritant into the oyster.

In 1921, at the World Exhibition in Paris, Cultured pearls from japan were presented to an amazed world public for the first time. Most of the pearls today are, as a matter of fact, cultivated or cultured pearls. To produce a cultured pearl a technician skilfully inserts foreign matter into a healthy, mature oyster or mussel. To protect itself from this irritant, the oyster produces cells that secrete multiple layers of nacre that eventually coat the foreign matter to become the cultured pearl. After the insertion, the oyster is placed in wire-mesh baskets for protection and hung from floating rafts in the sea. These rafts are moved, as required, to protect the oysters from natural predators, extreme changes in water temperature, red tides, and other natural disasters. Several times each year, the oysters are carefully cleaned of seaweed, barnacles and other parasites and resubmerged. Traditionally, after one to three years beneath the sea the pearls are then harvested. The shape and size of the resulting pearls depends, to a large degree, on the shape and size of their implanted irritant. Today there are three main groups of cultured pearls:

- **Akoya pearls**
- **white and black South Sea pearls**
- **Freshwater pearls**

Imitation pearls

Imitation and simulated pearls are completely man made from a variety of materials. They are commonly manufactured from beads of glass, plastic, or polished shells that are coated with a varnish that traditionally was made from ground-up fish scales but most recently from reconstructed mother of pearl.

Part 3
TYPES OF CULTURED PEARLS

Akoya cultured pearls

These cultured pearls are found in almost every jewellery store that sells pearls.

The term Akoya refers to nucleated saltwater pearls cultivated in the Akoya oyster *(Pinctada 1mbricata,* previously known as *Pinctada martensii).* The Akoya shell without the pearl inside is of little value because of its thinness and small size (no bigger than the palm of a hand). It is found mainly in Japan, Korea and China but also throughout many other parts around the world.

Today Akoya shells are obtained by spat (spawn of an oyster) collection and are bred in onshore tanks. When the oyster has reached about 7 cm in diameter, a spherical mother-of-pearl nucleus, together with a small piece of mantle tissue, are surgically inserted into the gonad (sex organ) of the pearl oyster. Depending on the size of the bead, and the health of the oyster, occasionally two or more nuclei can be inserted at the same time. The period of cultivation is between eight months and two years. After harvest, the Akoya oyster is not re-seeded.

Working on Akoya pearlfarm

Cleaning Akoya shells

The first pearls were cultured in Japan, where the techniques for growing pearls were developed about a hundred years ago. Today, the majority of Akoya pearls are cultivated in Japan, and China. Because the oyster is relatively small, its pearls generally grow from 2mm to 9min, or very rarely 10min.

Until 1988, Japan dominated the production of Akoya pearls. Since then, the Chinese have started to produce large volumes and it is expected that the Chinese Akoya will pose a substantial threat to Japan's Akoya Pearl Industry.

The majority of Akoya pearls harvested are round in shape. However, other shapes like baroque, button, oval, drop etc. can also be found. The base colours in Akoya pearls are primarily white, cream and yellow (often with a greenish overtone, sometimes with a grey but seldom with a pink or rose). Most of these pearls undergo a routine processing. The steps include: sorting in quality, drilling and basic bleaching in order to remove secretion that has accumulated between the layers of nacre.

There are no natural black Akoya cultured pearls, and only a small production of natural blue or grey pearls.

White South Sea cultured pearls

The white South Sea cultured pearl is recognized as the "Queen of Pearls". These pearls are grown off the coasts of Australia, Indonesia, the Philippines, Thailand and Myanmar. Australia, Indonesia and the Philippines are the main producers of white South Sea pearls.

The white South Sea pearls are cultivated in a type of mollusc called *Pinctada Maxima*. It is the biggest of all species and can grow up to 35 cm. It generally produces pearls from 9 to 18mm. The *Pinctada Maxima* includes the 'gold-lipped' or 'yellow-lipped' shell, found mainly in the Philippines and Indonesia. This variant predominantly produces pearls of champagne and cream colours. The 'white lipped' and 'silver lipped' shell is found mainly in the waters of Australia and the southern regions of Indonesia and mostly grows white pearls with a silvery shade.

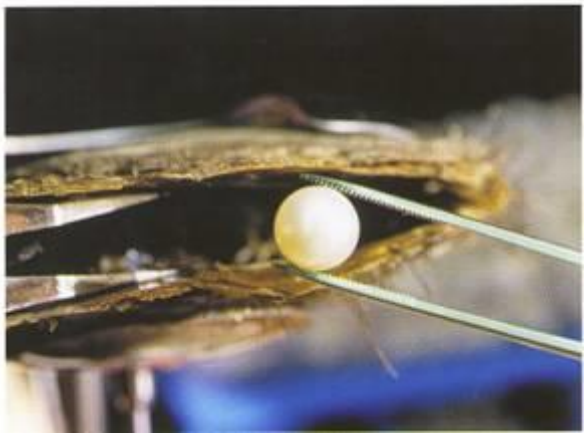
Pearl culturing begins with the collection of wild oysters. Divers are towed slowly over the sea beds by a special collecting boat. The freshly collected shells are then cleaned and prepared for the seeding operation. In Indonesia and the Philippines, pearl oysters are today mostly propagated in hatcheries. In Australia, although the conventional method of fishing shell is still widely used, hatchery techniques are becoming increasingly popular.

Diver collecting shells

Boat used to clean oysters

Shell ready for operation

Seeding involves first cutting out a section of mantle tissue (the skin-like organ that lines the inside of the shell) from a carefully chosen ‘sacrifice’ oyster of the same species. This small piece of mantle tissue, together with a spherical nucleus of polished freshwater mussel shell, is then surgically implanted into the gonad of a host pearl oyster. As simple as it sounds, it is in fact a very delicate procedure. The graft tissue supplies protective cells that develop around the nucleus to create a pearl sac that, once complete, secretes nacre around the implanted bead to hopefully form a cultured pearl.

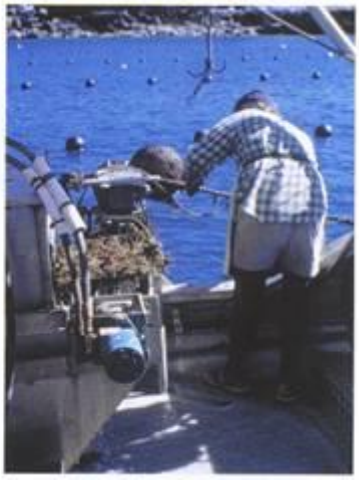


Seeding ofPinetada Maxima oyster

Following implant, the oysters are allowed to recover from the seeding process at temporary sites before being transferred to near-shore grow-out farms. Thereafter the oysters are regularly turned and cleaned. About 4-6 months after seeding, most farms x-ray the oysters to check that they have retained the implanted nucleus. A fair percentage of seeded oysters will invariably reject their implants. Only one nucleus is inserted into each oyster.

Bringing in the shells for cleaning

Shell cleaning



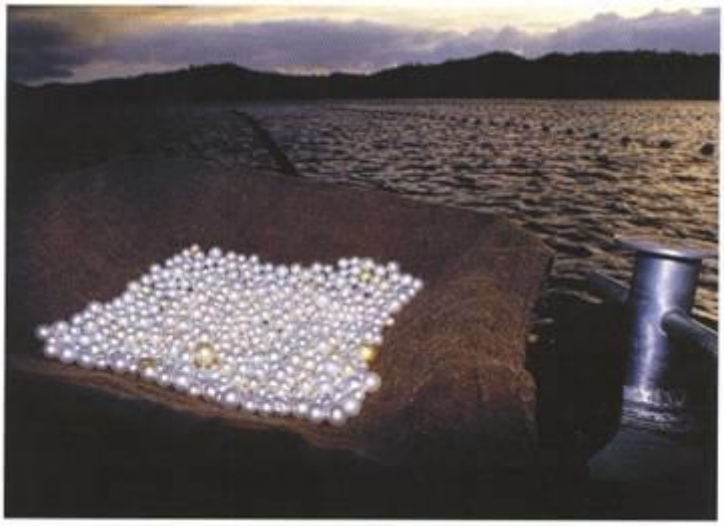
Working on lines

When the pearl is harvested two years later and, if it proves to be of decent quality, another nucleus (usually slightly bigger than the size of the harvested pearl) is implanted for yet another grow-out period in the hope that it will bear one more beautiful pearl when the oyster is opened two years later.

Not all oysters will produce a pearl. Some will die, some will reject the nucleus, and of those that will grow a pearl, only few will be perfectly round; a significant number will come in a whole variety of other shapes. A substantial percentage of the production is not saleable, or of very low commercial value. As a consequence, very few pearls will be of gem quality.

White South Sea pearls are harvested in winter when the water temperature is at its coldest. Immediately after extraction, the pearls are washed in salt and lightly polished in tumblers using bamboo chips to maximize its sheen. The pearls are then sorted and graded prior to sale.

White South Sea pearls come in a variety of colours, depending on the oyster species and the environment they live in. The 1 white-lipped' South Sea variety yields mainly colours in white, pink, silver and blue while the 'yellow--lipped' variety grows pearls from cream to yellow including champagne and gold. The natural golden colour is said to be the rarest.



Harvest surprise

Black South Sea cultured pearls (commonly known as Tahiti cultured pearls)

Pearl cultivation techniques reached Tahiti, French Polynesia, during the 1960s**.**

Tahiti cultured pearls are cultivated using the local species of the black lipped pearl oyster *Pinctada margaritifera* (12-15cm). This variety of mollusc is indigenous to the lagoons and the atolls of French Polynesia and the Cook Islands. The oysters love the pristine waters where temperatures range between 24-29 degrees.

The most common method of obtaining *Pinctada margaritifera* oysters is by collecting spat in the open water of lagoons. The process of raising a pearl oyster is a long one and requires a lot of care and attention due to its fragility. Once grown to about 2cm, the baby oysters are then raised to maturity in open sea nurseries' or 'grow~out' farms for about three years. During this time, the oysters are meticulously cared for to ensure they are strong and healthy for grafting.

The process of seeding is very similar to that used for white South Sea pearls. Cultivation time for black South Sea pearls ranges from one to two years **.**

For every 100 oyster nucleated, 50 will produce pearls out of which only about 5 will be gems **.**

A few small experimental production sites exist in Indonesia, the Philippines, Okinawa, Hawaii, Fiji and Australia, but Tahiti is by far the world's largest producer, representing 95 % of world production (the remaining 5 % is produced in the Cook Islands).

Seeding Tahiti oysters

A pearl farm seeding hut

Black-lip oysters suspended below water

The first recorded export from Tahiti was in 1972. Since then the industry has grown dramatically. The main buyers are Japan, Hong Kong and the USA. In an effort to guarantee the quality of Tahiti cultured pearls, The French Polynesian Government has regulated pearl classification by introducing a minimum nacre thickness of 0.8 min. This regulation is enforced by a mandatory export inspection control.

Tahiti cultured pearls come in sizes from 8-16min and sometimes larger. More common sizes are 9-13 min. The exuberant colours of these pearls range from gold through green to aubergine or purple, to dark hues including jet black. Generally, the darker the pearl, the more valuable it is. True peacock black pearls are quite rare and expensive.

Only a limited quantity of Tahiti cultured pearls develop as a round or a perfect drop. More common shapes are off round, oval, baroque and semi~baroque.

Because the French Polynesia has very little climatic variability, Tahiti Cultured Pearls can be harvested throughout the year.

Freshwater cultured pearls

Freshwater pearls are cultivated in several species of pearl mussel, including the Japanese freshwater mussel *Hyriopsis schlegeli.* Freshwater mussels are common throughout the world, but those used for pearl cultivation are mainly found in freshwater rivers, lakes and ponds (in China they are even found in places like the farmers' irrigation ditches). The mussels are extremely adaptable to local conditions. Their lustre is usually not as high as with other oysters used for pearl cultivation.

In China, practically all of the mussels for cultivation are propagated in open hatcheries. Their rate of growth is amazingly fast: in five or six months they can grow to 7-9cm in size and be ready for seeding. Practically all shells are seeded before they reach one and a half years.

Experimental cultivation of freshwater pearls began in Japan in the 1920s when it soon was discovered that it was possible to use a mantle tissue instead of a shell nuclei to trigger the birth of a pearl. The first production of 'all-nacre' commercially cultured freshwater pearls in Japan began in 1946 at Lake Biwa. The project was so successful that all freshwater cultured pearls, even those produced in China, came to be erroneously referred to as 'Biwa Pearls'. The Freshwater pearls from Lake Biwa were noted for their high quality and the extraordinary natural colours of their nacre.

China initiated its own freshwater pearl production in the late 1960s producing mainly pearls with a wrinkled surface and shapes similar to a grain of rice, hence 'rice shaped' pearls. During the 1980's and 1990's, improvement of quality took the world by surprise and rounder shapes, smooth surfaces and larger sizes began to appear. China not only produced these pearls in very large volumes but also at a cost that was a fraction of those from Lake Biwa. This unexpected competition, combined with pollution problems, brought the Lake Biwa production industry to a standstill. Today, there is only a very small production at Lake Biwa.

In China however, thousands of farmers are now cultivating freshwater cultured pearls under a system that provides neither control over supplies nor prices. At China's largest wholesale market in Zuzhou near Shanghai, approximately 1.8 tonnes of freshwater pearls are said to be traded every day. Most freshwater

cultured pearls sold today are composed only of nacre, without a mother-of-pearl nucleus. Those with a nucleus are usually larger in size, often in excess of 8mm.

For seeding, the mollusc is gently opened. Tiny slits are cut into its mantle and small slivers of living mantle tissue from a donor oyster are then carefully inserted into the slits. Depending on the age and size of the mussel, and the size and shape 0f the pearls the farmer wants to obtain, a single mollusc can be seeded with 20 to 60 specks of mantle tissue. Soon after seeding, pearl sacs begin to form around the soft irritant which, as time passes, melts away and a pearl starts to grow.

A freshwater mussel with its pearls ready to be harvested

The pearls then grow to various sizes depending on how long the farmer is willing to wait. After three years, approximately 30% of the pearls reach sizes of up to 7mm. If the farmer waits another year, close to 80% of the pearls will he 7mm in size, or larger.

After harvesting, the mussels can be returned to their natural environment and can be harvested again in a few years. There is no follow-up operation; the pearl sacs that were simulated by the first operation are simply allowed to produce again. Even though the mussels generally produce fewer pearls the second time around and the pearls are somewhat flatter in shape, they do have a better lustre and stronger colours.

The big variety of colours in freshwater pearls

Colours come in white, champagne, cream, orange, pink, purple, lilac, mauve, dark blue and brown. However, the bewildering array of attractive colours in which these pearls are presently being marketed strongly suggests that colour treatments are being performed on these pearls.

Sizes now range from 2-10mm, with exceptional pearls reaching 15mm and more. Freshwater pearls have an endless variety of shapes, but the most predominant are oval, egg, button, drop and ‘potato’. perfectly round are very rare, especially in the larger sizes. By altering the shape of the implanted mantle tissue and its placement, farmers can influence the shape of the pearls and, to a lesser degree, their colour .

Mabe cultured pearls (Half-pearls)

Mabe is a term commonly used in the pearl trade to describe a cultured half-pearl that is grown on the inside of a shell. A dome-shaped nucleus with a flat back is glued directly onto the inside surface of the shell. The pearl oyster then deposits layers of nacre over the nucleus, creating a mother-of-pearl dome. Almost all molluscs can be used for this operation (including the *Pinctada Margaritifera* and the Abalone specie).

Depending on the form of the nucleus the farmer inserts into the oyster, several shapes can be produced, including round, oval, cushion, drop and heart. Usually, three to four nuclei (in exceptional cases, up to six or seven) can be placed into each valve.

With the *Pinctada Maxima*, Mabe cultivation usually occurs in the last phase of a pearl oyster's life. The oyster may have produced several pearls before it is used to cultivate Mabe pearls. Harvesting takes place after 8-12 months of cultivation. The Mabe pearls are cut from the shell, the nucleus is removed and the thin nacreous 'caps' (rarely exceeding 1 mm in thickness) are then processed: they are cleaned, bleached, stuffed with an epoxy resin and the base is then covered with a mother-of-pearl backing. Mabe pearls also are sometimes erroneously referred to as Blister pearls.

Mabe pearls are very fragile due to their thin coating and weak structure and are generally used for earrings and pendants. Wearers must realize that if they drop their Mabe Jewellery or bump it against a hard surface it can easily crack or break. A Mabe pearl with a broken or cracked surface cannot be repaired; it has to be replaced.

Keshi pearls

Keshi (a Japanese word for 'poppy) pearls are naturally formed in the soft tissue of most cultured pearl bearing oysters. Usually, they form from the accidental intrusion of tiny organisms such as parasites, eggs, sand, shell fragments, or from mantle tissue that has detached itself from the implanted nucleus. However, these pearls are the by-product of a culturing procedure, and must be recognised as such. Akoya Keshi pearls tend to be small in size (around 2mm or smaller) whereas Keshi from both white and black South Sea pearl oysters can reach any size from 4 to 10mm and above.

There is considerable controversy with respect to the classification of whether Keshi pearls should be described as natural pearls or cultured pearls. It is impossible to determine the difference between Keshi pearls and natural pearls by visual examination, but it can in most cases be established by X-ray and other advanced laboratory techniques. The fact that it is the only pearl resulting from seawater cultivation without a man-made nucleus makes the Keshi pearl special and appreciated by true pearl lovers worldwide.

Abalone cultured pearls

Abalone pearls are formed by univalve gastropods (sea snails) commonly known as abalone. Various species of abalone, their shells lined with characteristic highly iridescent nacre, are found in coastal waters of California, Korea and New Zealand. Natural abalone pearls are extremely rare, usually of quite baroque shape, and are collectors' items. As a consequence of this rarity, several commercial farms for cultivating abalone pearls have been established in California and in New Zealand. Farmed abalone are being reared from spat culture to maturity, and then implanted with polymer hemispheres to yield a range of half pearls with most attractive colours. Depending on the species of abalone, the colour range may present mixtures of blue, green, fuchsia and gold.

Part 4
HOW TO JUDGE A PEARL

THE SORTING AND PRICING OF PEARLS should not be a daunting task. Competency and appreciation is attained by looking at pearls on a regular basis, understanding the production process and developing an awareness of international market conditions for pearls. Beauty and personal taste is the most important criteria when selecting a pearl. Much like the 4 C'S of diamonds, there are certain grading characteristics which determine the value of a pearl: **lustre, colour, size, surface and shape.**

Lustre

Lustre and surface appearance are the most important characteristics of pearl quality. Similar to the brilliance of a diamond, a lustrous pearl has more than just a shiny, reflective surface. Pearls display an inner glow when light reflects from the thousands of microscopically thin layers of nacre that form the pearls. Molluscs in cold water produce smaller and thinner aragonite (mirror like) platelets which result in a better lustre in the pearl. For this reason, pearls are generally harvested in winter.

Grades of lustre include:

- **Excellent lustre:** sharp, mirror-like reflections which are bright, shiny, lively and clear
- **Good lustre:** bright reflections, but less sharp
- **Fair lustre:** weaker reflections which *are less clear*
- **Poor lustre:** dull, with faint or no reflections

High lustre is an indication of a thicker coating of quality nacre on a pearl. It is an assurance of durability as well as beauty. Pearls with high lustre have sharp, intense and almost mirror-like reflections, and there is a high contrast between their bright and dark areas. Pearls with very low lustre are easily recognized by their milky or chalky external surfaces because there is a low contrast between their bright and dark areas.

Remember: thinly coated cultured pearls cannot display good lustre.

Colour

A pearl's body colour as we see it is a combination of several characteristics:

- **Hue:** wavelengths (colours) contributing to its over-all colour.
- **Saturation:** strength or intensity of the colour.
- **Tone:** lightness and darkness of the colour.
- **Overtone:** represented by the one or more colours that overlies the body colour. On black pearls, overtone colours are easiest seen more easily on the lighter areas of the pearls. On white pearls, overtone colours are seen more easily on the darker areas of the pearl.
- **Orient:** the rainbow colours that are seen below or on the pearl's surface.

What makes the colour of a pearl?

The colours displayed by pearls are a consequence of the interaction between incident light and the structure of the pearl's nacre. Fine pearls are somewhat iridescent; for they not only reflect light - they break it up into different colours. On high quality white round pearls, this may result in a very subtle and a pinkish overtone. High lustre baroque pearls also may display flashes of rainbow colours.

Other factors affecting pearl colour include the species of host pearl oyster, quality of nacre (if the nacre is too thin, the colour will look milky and lack overtone tints), the environment in which they are cultured, the trace-elements found in those waters, and, importantly, the colour characteristics of the tissue that is inserted with the bead nucleus during the implant process.

Characteristic colours of pearls

Akoya cultured pearls occur basically in white, greenish, cream, yellow and grey colours. Most of the pearls are bleached to remove unwanted pigments. The most rare -and expensive colours are the white pink or silver pink Akoya, and fancy colours such as dark gold and natural blue. The cheapest colours in Akoya are the yellow. The harvest of naturally blue Akoya pearls is very small in comparison to the large numbers of treated blue pearls in the marketplace. There are no natural black Akoya pearls. Some processors enhance the colour of their pearls by adding some dye which often deteriorates over time.

Dark gold: said to be the rarest of all

Freshwater cultured pearls come in a variety of 'claimed to be' natural colours that range from lilac to purple, orange, brown, rose, grey, gold, champagne and white. Choice is simply a question of personal taste. Today, however, most Chinese freshwater cultured pearls are colour enhanced by a variety of still secret processes, most of which are not revealed.

South Sea cultured pearls are harvested in a subtle range of colours among which silver white, white rose and dark gold are the most desirable and expensive. Other colours, such as cream, yellow, blue, grey and champagne, are more affordable. White South Sea pearls may be bleached, but are very rarely colour treated.

Tahiti cultured pearls are found in an enormous spectrum of colours. The rarest and most costly are peacock black, slight bluish or greenish black, and/or a straight dark black. Next in line are the lighter colours, and variations within brown, yellow and brownish red colours. In rare cases silver and white pearls are produced by black-lipped pearl oysters.

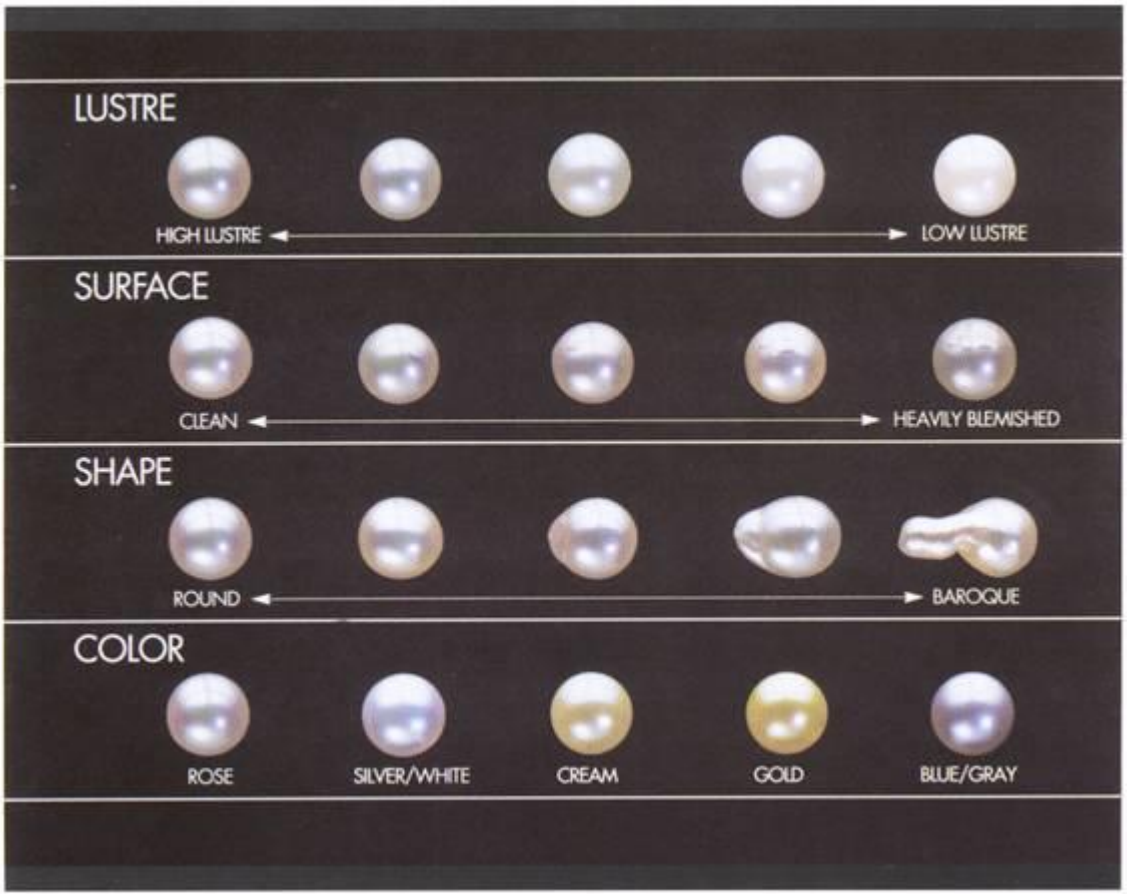
Mabe cultured pearls come in a range of colours similar to that of whole pearls cultivated in the same pearl oyster. Treatment of the pearl cap of silver- and yellow-lipped pearl nacre, by bleaching or use of coloured cavity fillings, will produce white, pinkish white, silver-white, and in rare occasions, blue Mabes. Mabe pearls from the black-lipped pearl oysters will of course come in the full spectrum of black colours, while abalone Mabes will display a range of iridescent bluish to greenish colours.

Keshi pearls usually come in white, silver-white, grey, cream and gold colours from the Akoya shell, the silver and yellow-lipped pearl oysters, and grey to black colours from the black-lipped pearl oyster.

Size

Size is a question of personal preference however it has a huge impact on the price of the pearl. The pearl's size is measured by its width in millimetres. Round pearls rarely exceed 20mm in diameter. For baroque pearls and other shapes, sizes can reach up to 45mm.

- *Akoya cultured pearls* average 2 to 10mm in size. Most of the small-size production of 2 to 7mm diameter now comes from China. Better quality goods and bigger sizes of 7 to 9min are still cultivated in Japan. Sizes of 9.5min and above are extremely rare. The general size tolerance for Akoya pearls is 0.5mm (e.g. 7-7.5mm)
- *Freshwater cultured pearls* average 2 to 7mm in cultured seedless (non-nucleated) pearls, but are bigger, even above 10mm, for nucleated freshwater pearls. The general size tolerance for freshwater pearls is 10mm (e.g. 3-4mm).
- *White South Sea cultured pearls* average 9 to 18mm in diameter (in rare occasions up to 20mm). The general size tolerance is 1.0mm (e.g. 14-15mm).
- *Tahiti cultured pearls* generally come in smaller sizes because their mother shell is smaller. The size tolerance is 1.0mm (e.g. 11-12mm).
- *Mabe cultured pearls* commonly occur in sizes 8 to 20mm. Their size tolerance is 1 mm (e.g. 10-11mm).
- *Keshi pearls* vary in size, depending on their source. For example, 2 to 4mm for Akoya Keshi, 4 to 12min (in rare cases bigger) for South Sea Keshi. Size tolerance does not apply to Keshi, as all pearls are different in size and shape.



Cultured pearl quality chart

Surface

Coating

Nacre quality is an important factor in the general appearance of pearls. A thick coating of nacre also is important for the durability of pearls. Although a thick-coated pearl does not guarantee a high lustre on the pearl, thick-coated pearls in general tend to be more lustrous. In a thinly coated pearl, the nucleus may be slightly visible appearing to flicker from dark to light when the pearl is rotated in front of a strong light source. If the pearl is coated with poor quality nacre, it will be a dull, chalky white.

Blemishes

Just as few diamonds are flawless, only a few pearls are perfectly smooth. The presence of blemishes, whether slight, mild or severe, is called 'spotting'. Blemishes are natural characteristics that do not significantly diminish the overall beauty of the pearl.

The quality of nacre, and in turn its lustre, is affected- by a variety of factors such as: cultivation techniques, location of pearl farm, health of host oyster, time of the year when the pearl is harvested, pollution, abnormal temperature variations during cultivation, and the type of pearl oyster used in the culture.

Types of blemishes:

- **Bump and welt:** a raised area that is found alone or in groups.
- **Spot:** an area that is darker or lighter than the surrounding nacre.
- **Discoloration:** spotty areas often caused by concentrations of conchiolin, the protein into which the crystals forming nacre are deposited.
- **Chip:** a fissure or a depression on the surface of a pearl.
- **Pit and pinpoint:** tiny hole or depression, which is barely noticeable, on the surface of the pearl, found alone or in groups.
- **Cap:** an area where the nacre has not covered the nucleus.
- **Dull:** an area of very low lustre due to variations in nacre quality (chalky appearance), or contact with chemicals, cosmetics, or skin secretions.
- **Crack:** breaks in the nacre and/or bead nucleus. A small crack in the bead may look like a little hair trapped under the nacre. Cracks, even when not visible, can threaten the durability of a pearl. Thick nacre does not crack easily, but thin nacre does crack easily.
- **Scratch:** the straight or crooked line formed by a thin depression on a pearl's surface.
- **Abrasion:** scratches on the pearl's surface resulting from damage.
- **Wrinkle:** an irregular ridge or fold on the pearl's surface.
- **Hammered:** similar in appearance to the surface of an orange peel.

For evaluation purposes, the following classification of blemishes can be applied. Blemishes are judged by the naked eye and without the assistance of magnification:

- **Clean:** without blemishes, or very small 'spotting' that is not visible to the trained eye.
- **Slightly spotted:** a few small surface irregularities visible to the trained eye, but generally a clean look.
- **Moderately spotted:** surface irregularities, but one side of the pearl is still clean.
- **Spotted:** noticeable surface irregularities all over the pearl.
- **Heavily spotted:** strong surface irregularities which affect the look of the pearl and threatens its durability.

When buying on a budget a consumer should be steered toward pearls with slight or mild spotting but having enough lustre to mask this spotting.

Shape

The greatest misconception about pearls is that they are, or should all be round. Off-round, drop, baroque and fancy-shaped pearls are becoming increasingly popular. A perfectly round pearl is quite rare. Generally, the rounder the pearl, the more expensive it gets. The common shapes in which pearls are found include:

- **Round pearls:** perfectly spherical pearls
- **Drop pearls:** dewdrop shaped pearls
- **Button pearls:** pearls that look like a flattened sphere
- **Circled pearls:** showing circular concave rings on the surface
- **Baroque pearls:** asymmetrical or irregular in shape. In baroque cultured pearls, the space between the nucleus and the irregular coating is, in some instances, hollow

Some pearl shapes are typical of certain types of oyster or certain methods of production:

- *Akoya cultured pearls* are mainly round and off-round shapes; but substantial quantities of baroque shapes are still harvested.
- *Non-nucleated freshwater cultured pearls* come in all shapes, whereas nucleated freshwater pearls will mostly come in round and off-round shapes.
- In South *Sea cultured and Tahiti cultured pearls* the percentage of round shape is small and highly valued Most pearls come in off round, drop, oval, button, and circle shapes.
- *Mabe cultured pearls* are mostly produced in round, oval, drop and heart shapes.
- *Keshi pearls* can develop in all shapes from near rounds to drops, ovals, baroques, fancy shapes, and even sticks that can be flat or thick. Keshi almost never come in round shapes.

The shape of the pearl is not an issue of quality. However, stronger demand exists for round shapes, as well as perfect drops. The more perfectly round the pearl, the more valuable it will be. However, rare, perfectly symmetrical drop pearls can reach as high a price as round pearls. Baroque or unusually shaped asymmetrical pearls are less expensive than round pearls; yet they can look equally attractive.

Cultured pearl quality chart

How to look at pearl quality

In addition to the above criteria that determine the price of a pearl, there is one more important factor that is often forgotten: the matching of pearls. There is an old saying that 'No two pearls are alike'. It is difficult to find a perfect pair of pearls, or a necklace of perfectly matching pearls.
Helpful tips to judge the quality of pearl strands:

- Examine the pearls on a flat white surface (white cloth, matt white board or paper). The lustre and colour of pearls are hard to judge against a dark surface.
- Try to examine the pearls directly under a natural day light source, instead of away from the light. Direct, natural light brings out the lustre and true colour of pearls.
- Look for the darkest and brightest areas of the pearls in a strand. Then compare the contrast between the two. The lower the contrast and the milkier pearl, the lower the lustre.
- Examine the reflection of light from the pearls. Generally, the less sharp and intense it is, the lower the lustre will be. Sometimes, however, a lack of sharpness is due to surface flaws rather than the overall lustre.
- Compare the lustre, colour and blemishes of individual pearls on a strand. The quality of a strand is determined by its overall appearance, not just by one pearl.
- Check the regularity of size and shape (especially in graduated strands).
- Check the regularity and perfection of drilling and stringing of pearls in a strand.

Judging pearls in daylight

Comparing strands of pearls

- If possible, lay the pearls alongside other strands of similar type and compare their lustre and colour. A strand will look better when viewed next to lower quality strands, rather than next to those of higher quality strands.

As a general guideline, your eye is the most important judge.

Part 5
TAKING CARE OF PEARLS

REMEMBER THAT A PEARL is not a rock. Pearls can keep their beautiful lustre for centuries, if their generations of owners are mindful how these jewels of the sea differ from other precious gem materials. Proper care of pearls is not difficult, for it is merely a matter of remembering that these gems are organic by nature, grown in water from the living cells of a living creature.

Like the oysters and mussels that formed the pearls, they require moisture. Because pearls usually are worn on a silk string that will deteriorate when wet, pearls will need to be re-strung more frequently, if this is the case. Never expose pearls to chlorinated water. Like their 'organic' owners, pearls are prone to damage from pollution and injury. They can't stand the heat, and they should definitely stay out of the kitchen.

What to do with pearls

- Store pearls separately from other jewellery - in a cloth bag or jewellery pouch.
- Shield pearls from cosmetics. Apply cosmetics, perfumes and sprays first, before putting on pearl jewellery. Remember that although sun creams and insect repellents are good for you, they are bad for pearls.
- Remove spills immediately if pearls come in contact with food acids. Use a soft cloth moistened in water to wipe the pearls down and then dry them with another soft cloth.
- After wear, wipe pearls clean with a soft cloth. Makeup, powder, grime and skin acids otherwise will form a soft, gluey substance on the string, attacking both the silk and the pearls.
- Re-string pearls regularly both for the sake of the pearls and to avoid a broken string.
- Replace individual pearls on the recommendation of a competent pearl stringer. Be aware that pearls worn against the skin can absorb perspiration and eventually lose their lustre as well as their spherical shape. So be careful.

What not to do with pearls

Avoid:

- Perspiration and acids.
- Make-up, skin creams, perfume, hairspray, insect repellent, talcum powder.
- Dust and grit.
- Soap and detergent.
- Scratches
- Chlorinated and brominated water in showers, pools, or spas.
- Storage over long periods in bank vaults where humidity is low
- Dehydration from being wrapped in cotton wool and plastic bags, or from exposure to light and heat, and especially exposure to spotlights in shop windows and showcases
- The kitchen, with all it's acidic ingredients and the high heat used in cooking (pearls will tolerate temperatures up to 100oC for a short time, but hot fat and stoves/ovens often reach damaging temperatures). For the same reason, pearls should not be stored near a radiator or sunny window.
- Steam cleaning pearls or placing them into an ultrasonic cleaner

Queen Elizabeth I was probably the greatest pearl lover of all times, with more than 3,000 pearl-beaded gowns, almost 100 pearled wigs, and chests filled with pearl strands and pearl jewellery. Five centuries later, many of Elizabeth I's pearl treasures, and also the diadems, jewellery and sceptres of other royal houses, remain in excellent condition. Precious pearl museum pieces from as long ago as 300 B.C. still retain their lovely lustre today. Common sense care can assure that today's pearl jewellery also will become tomorrow's heirlooms.

Part 6
HOW TO WEAR PEARLS

Pearls as fashion statements

WHEN PEARLS ARE PURCHASED, the consumer usually has an idea of what length and design is desired for a necklace or bracelet. Although most people can point to the length they prefer in a pearl strand, there are names that describe each of the six standard lengths, which are as follows:

- **Dog collar (30 to 32cm)**: multi-strand of pearls worn tightly pressed against the middle of the neck.
- **Choker (36 to 40cm)**: can be a single strand of large pearls (-Akoya or South Sea), or a multi-strand of small Akoya or freshwater pearls with the central pearl usually resting in the hollow of the throat or just below it.
- **Princess (40 to 50cm)**: is often worn with a pearl enhancer or detachable pendant.
- **Matinee (50 to 60cm)**: is often strung to contain two hidden clasps, so that it can be worn either as a long necklace (casual) or as a necklace and a bracelet (business attire).
- **Opera (70 to 90cm)**: about twice the length of a choker, it can be worn as a single strand, or also as a versatile two-strand choker.
- **Rope (100cm or longer)**: the rope, reminiscent of the art deco look, can be in eye-catching designs. The defined length will vary according to the jeweller or company using the item.

The above lengths are approximate. Definitions of necklace length terms can vary from one jeweller to another. Keep in mind that pearl strands become slightly longer when knotted and strung with a clasp to form a necklace.

Part 7
IDENTIFICATION OF PEARLS & THEIR TREATMENTS

A LITTLE LESS THAN A CENTURY AGO, only three types of pearls were available on world markets: Natural pearls, Akoya cultured pearls and imitation pearls. Today however, the jeweller comes across the challenge of identifying and placing an appropriate value on many additional pearl varieties such as: a cultured White South Sea pearl, a cultured Black Tahitian pearl, a nucleated or non-nucleated cultured Freshwater pearl, a Keshi pearl etc. The Jeweller has to be prepared to answer basic questions asked by today's discerning and information-hungry consumers. Anyone working in a retail jewellery store can expect, sooner or later to hear questions like these coming from the other side of the counter:

Is this pearl natural or cultured? Is it a freshwater pearl?

Is this a non-nucleated pearl? Is this a natural pearl or a Keshi?

Has this pearl been treated to enhance its appearance? Has it been dyed?

Is the colour of this Akoya pearl stable?

Customers will expect professional advice and precise answers.

The complexity of today's pearl market, and the products it sells, offers great challenges to those who work in the retail industry. While definitive identification of pearl type and some forms of treatment is usually well beyond the capabilities of the average retail jeweller and his staff and advise from a reliable supplier, a gemmologist or a pearl testing laboratory is necessary, there are a few basic observations that can be used to assist forming an opinion about the possible identity of a pearl or the possible nature of a particular value enhancing treatment that it may have been subjected to. Therefore, develop your powers of observation:

Careful examination of the external surface of pearls, in good illumination, can reveal lots of clues with respect to their identity. For example:

Natural or not?

Check strands for uniformity. As natural pearls are very rare, strands of natural pearls contain pearls that are mostly not uniform in shape, size, and colour. Due to this variability, most natural pearls are strung as graduated necklaces. In contrast, strands of cultured pearls are mostly uniform in the size, shape, and colour of pearls they contain.

Hold the strand horizontally between your fingers and trans-illuminate them with a strong light. Rotate the strand and see if the pearls ‘blink’ back at you. 'Blinking' is the result of light being transmitted slightly differently through the shell bead and surrounding nacre of a bead nucleated cultured pearl. This observation will assist identifying them as cultured pearls.

Examination (with a loupe) of the drilling hole in the pearl looking for evidence of the presence of a bead under a layer of nacre (the nacre can vary from 0.2mm to 4mm and more depending on the type nucleated pearl) confirming that it is a Cultured Pearl.

Akoya or South Sea?

Check the size (diameter) of round pearls, for size can be a good indicator of origin. Akoya bead nucleated cultured pearls seldom exceed 9.5mm in diameter. Pearls exceeding this size are likely to be South Sea pearls or, in exceptional cases, the newer Chinese nuclei-cultured Freshwater pearls.

Colour enhanced or not?

Check the external surface of the pearl for evidence of dye concentration in defects on the surface of the

pearl, in surface-reaching fractures in nacre, or underlying the nacre of thin-'skinned' Akoya pearls. Each of these observations, which may need magnification (see below), is a positive indication of colour treatment by bleaching and dyeing.

Looking (with a loupe) for the presences of dye adherent in the drilled channel to a pearl, confirming that the pearl has been colour treated by bleaching and dyeing.

Surface treatment or not?

Check (with a loupe) for the presence of wax on the surface of the pearl confirming that the surface of the pearl has been waxed to enhance its lustre.

Check (with a loupe) for scratches on the surface of the pearl confirming that the surface of the pearl has been over-polished to enhance its appearance.

Imitation or not?

With a loupe, look for the presence of chipping of artificial nacre from the surface of the glass, plastic or shell beads used in the manufacture of imitation pearls.

If in doubt, always ask for an expert opinion from your reliable supplier or a Gem laboratory.

Part 8
TIPS ON HOW TO CHOOSE PEARLS AND HOW TO BUY PEARLS

Frorn loose pearls t \o finished jewellery

JUST A SIMPLE WORD TO THE WISE: **You can buy cheap pearls, but you can't buy good pearls cheap.**

Always buy the nicest pearl your budget can afford. It is better to buy a nice lustrous strand of small pearls than to buy a strand of large dull ones. There are many strands that are cheaper on the market but, they are just that – cheaper.

Choosing pearls is actually choosing a style that matches personality, purpose, and budget.

Always visit a trustworthy and established supplier who has good knowledge of pearls, and who carries a good range for your selection.

Choices of pearl type, size, colour and roundness will vary with personal preferences and with personal budgets. However, lustre and nacre - the very essence of pearls - should never be compromised.

Part 9
HOW TO SELL PEARLS

THE KNOWLEDGE YOU'VE ALREADY GAINED by taking this course will help you stand out from any competition. Consumers recognize the difference between informed and uninformed sales professionals, and they prefer to shop where they'll get the best service and product information. For many, the purchase of valuable pearl jewellery is unfamiliar territory. With your superior product knowledge, you'll deliver better customer service and you'll sell more pearl jewellery.

First, you must know what you are selling and understand the pearls you are selling. Secondly, you need to understand your customers' needs. You should never forget that your main goal should be to help your customer make a buying decision. The right balance between product knowledge and sales technique will help you select the right piece for your customer, answer their questions, suggest appropriate advice for wearing, storage, and the cleaning and maintenance of purchased pearls, and close more sales.

Customers who yearn for pearl jewellery are following a tradition that extends back through the ages. Pearl items are extremely appropriate for bridal-party gifts; but because pearls are a classic complement to a business suit, they're also appropriate gifts to mark graduations or promotions. They're June's birthstone and a traditional gift for 12th and 30th anniversaries.

Pearl jewellery and pearl accessories have become a lot more fashionable with the help of some European fashion designers incorporating pearls in their catwalk shows as well as a lot more advertising and marketing to the end consumer. In addition, the average price of pearls has dramatically reduced over the last decades, which makes the younger consumer a new market for pearls. Today, pearls are seen as a fashionable accessory, which can be worn by anyone and anywhere.

Most consumers have very little knowledge about pearls. Therefore it is important to present the product's elegance and quality before quoting a price. Because the average customer doesn't know the price of pearls, try presenting your mid- to higher-priced selections first and work downward in price rather than upwards. If the customer can't afford a high-quality pearl strand, suggest a beautiful pearl ring, brooch or bracelet, or a pair of pearl earrings.

A wire necklace or cord with a single white or black South Sea pearl could be another popular choice. Remind your male customers that they can wear pearls too, for example in cufflinks and tie tacks. Since pearls symbolize marriage, suggest pearl cufflinks **for a bridegroom.**

Explaining that pearls require special care helps build value into your presentation. It is important to explain how delicate and special pearls are, but they're not difficult to care for. Remember to advise your customer to return once a year to have their pearls professionally cleaned and re-strung. When they do so, show your new pearl jewellery selection and offer to help them build a pearl wardrobe. Let your customer touch the cultured pearls while you demonstrate them. It will add to their sense of ownership. Always let your customer try on pearl jewellery. It looks much better on your customer than it does lying in you display case or sitting on a pad.

Consumers usually compare prices when they buy diamonds. Because cultured pearl qualities are not compared in the same way as diamonds, it's much harder to compare prices of seemingly identical cultured pearls. Consumers are usually less sure about cultured pearl value factors. For instance, even if a customer knows that a cultured pearl's shape can affect the price, they might not know exactly how. Customers are more likely to buy cultured pearls from a retailer who had detailed knowledge and expertise to share with them.

And last but not least, you also can be the one who is wearing pearls (this is unisex advice, especially since Ian Thorpe showed how good pearls can look on a neoprene rubber worn around the neck).

PEARL DICTIONARY

Abalone: a univalve mollusc, known for its tasty meat and iridescent bluish to greenish inner shell colour. This mollusc is cultured to produce mainly Mabe (half)-pearls.

Abductor: large muscle that controls the opening and closing of a pearl oyster shell. The abductor muscle of many shell species are well known as a gastronomic delicacy (scallops etc.)

Akoya: a mollusc used to produce saltwater cultured pearls mainly in japan and China with the scientific name Pinctada imbricate (sub specie Pinctadafucata / Pinctada martensii). It is simply referred to as Akoya Shell.

Aragonite: crystallised calcium carbonate platelets of microscopic size found in the chemical composition of pearls (see: nacre).

Baroque: any pearl of irregular shape which is non symmetrical: semi-baroque (resembling a drop or a button or off-round shape), baroque (stronger irregular shapes) and heavy baroque or fishtail baroque (extremely deformed shapes).

Bivalve: see mollusc.

Biwa: a lake in western japan where freshwater pearls have been cultivated mainly in the 1970's and the 1980's.

Black Pearl: a pearl grown in the 'Black-lipped shell' Pinctada margaritifera. Black pearls come in a wide spectrum of colours.

Blemish: any surface defect on a pearl. Blemishes can include spots, bumps, pits, holes, cracks, chips, wrinkles and dull spots.

Blister: a natural pearl usually caused by the chance intrusion of a parasite or other foreign matter between the internal wall of the oyster's valve and the flesh or mantle. The oyster cements the intruder to its valve with nacre, creating a swelling of the inner shell (blister). Often the intruders bore their way through the shell to the inside, and the blister is the result of the defensive mechanism of the oyster. The name 'blister' is often erroneously applied to Mabe pearls.

Button: a shape of a pearl where two sides of the pearl are slightly flat.

Choker: a necklace, uniform in size, measuring 36 to 40cm in length.

Circles: concentric rings that form on the surface of a pearl which are concAve in appearance.

Conch: a large mollusc found in the Caribbean. Precious for its edible flesh and its very attractive shell which can occasionally produce a non-nacreous 'pink pearl' of which the colours can range from a pale yellow to a dark pink. The pink pearls often resemble pink coral and their shapes are mostly irregular.

Cultivation: the process whereby an oyster or mussel is 'seeded' or grafted, grown out and then harvested to produce a cultured pearl.

Cultured: a pearl whose formation has been started by human intervention with the insertion of a piece of mantle tissue, with or without a nucleus, into the mother oyster or mussel.

Gonad: the pearl oyster's reproductive organ.

Grafting: the process of inserting mantle tissue during a pearl-seeding operation which will then form the pearl sac that produces the nacre coating.

Gold-lip: a variety of Pinctada maxima, the oyster species found mainly in the northern equator waters of Southeast Asia and northern Australia. The inner edge of this mollusc's shell is often golden yellow and it usually produces cream, yellow or golden-coloured South Sea pearls.

Grading: the process of sorting pearls according to size, shape, colour, lustre and blemishes.
Graduated strand: a necklace (often 45cm in its length) whereas the largest pearl is in the centre of the necklace, with adjacent pearls gradually diminishing in size. The pearls next to the centre pearl are called the shoulders. As there is always a centre pearl in a graduation, the strand will always have an uneven number of pearls.

Grain: a unit of weight for natural pearls. One grain equals 0.05 grams.

Hama-age: a Japanese name for the better-grade of Akoya raw material in their pre-processed state. The gem grade is called 'bana-dama' whereas the lower grade material is called 'do-dama' or 'kuzu'.

Imitation: having the appearance of natural or cultured pearls, but entirely man-made. See Mallorca---.

Kan: a Japanese unit of pearl weight equal to one thousand momme, or 3.75 kilograms.

Keshi: pearls formed accidentally in oysters that produce cultured pearls. The smallest of them, one or two millimetre in size, are called 'seed' or 'poppy pearls.

Lustre: the appearance of a pearl's surface judged by its brilliance and ability to reflect light. See Orient.

Mabe: a hemispherical cultured half-pearl grown on the inside shell of a mollusc, as opposed to inside a mollusc's body.

Mallorca: the commercial name used to market certain imitation pearls. The name has been taken from the island off the Spanish coast. Also: "Majorca'.

Mantle: the tissue that lines the shell of nacre-producing molluscs from which tiny fragments are used to stimulate pearl formation in another pearl oyster or pearl mussel. It is made of epithelial cells which secrete the material that forms the shell (mother of pearl) and pearls.

Matinee: a necklace of uniform size and 50-60cm in length.

Mollusc: a soft-bodied invertebrate animal which possesses a hard shell and that includes all pearl producing animals. Molluscs are found in seawater and in freshwater. A mollusc can be 'univalve' (with one shell), e.g. snails, abalone or bivalve (with two shells connected by a hinge) e.g. Oysters and mussels.

Mussel: a generic name for certain types of freshwater or seawater bivalve molluscs.

Momme: Japanese measure of pearl weight used for cultured pearls. One momme equals 3.75 grams or 18.75 carats.

Mother-of-pearl: the shiny interior (nacre) of both shells of certain pearl oysters and pearl mussels, and univalve molluscs such as the abalone, which is used to make decorative objects and buttons.

Nacre: the calcium carbonate based crystalline substance that a pearl oyster or pearl mussel deposits, layer by layer, around an alien substance (shell bead or piece of mantle soft tissue) to form a pearl.

Natural Pearl: a pearl formed by complete natural process, without the intervention of man.

Nucleus: usually a small mother-of-pearl bead made from the shell of freshwater mussels. Most often spherical, it forms the core of many types of bead nucleated cultured pearls.

Opera: a necklace, uniform in size, 70 to 90cm long, about twice the length of a choker.

Orient: the visible lustre, iridescence or luminosity of a pearl's surface.

Pearl: a calcified organic gem formed within the body of a mollusc. Usually refers to a natural pearl when no qualifying adjective of 'cultured' precedes it.

Pearl Oyster: a mollusc capable to produce pearls, mostly of the genus 'Pinctada', important for commercial value but not suitable for eating.

Pearl processor: a person/company who buys cultured pearl hama-age (raw material) from the farmer and who prepares (value-enhances) them for use in various types of jewellery, including necklace making.

Pinctada: scientific name of oyster used for production of seawater pearls: South Sea cultured pearls (Pinctada Maxima), Tahiti cultured pearls (Pinctada margaritifera) and Akoya cultured pearls (Pinetada imbricata).

Princess: a necklace typically 40 to 50cm in length.

Rope: a necklace usually 100cm in length.

Silver-lip: a variety of Pinctada maxi . ma, a species of pearl oyster found mainly in Australian and Indonesian waters, whose inner shell edge is often silvery-white. Some-times called 'white lip' it produces lighter~coloured South Sea pearls.

Spat: spawn of an oyster.

South Sea pearls: a generic name for those cultured pearls produced mainly by the Pinctada maxima (silver and gold-lipped pearl oysters) and Pinctada margaritifera (black-lipped pearl oyster) species.

Univalve: see mollusc.

Uniform strand: a strand of pearls, nearly uniform in size, with a tolerance of 0.5mm for Akoya pearls and 1mm for South Sea pearls.

Valve: shell of a mollusc.

PEARL COURSE EXAMINATION

Fill out your answers on page 27

Q 1. A pearl that forms without human assistance is called a
A. Biwa pearl C. natural pearl
B. blister pearl D. cultured pearl

Q 2. Natural Pearl size is measured in
A. grams C. momme
B. carats D. grain weight

Q 3. What is a spat?
A. a substance that the oyster ejects to produce the nacre
B. a nucleus rejected from the oyster
C. a larva that will grow into a baby oyster
D. a utensil to insert the nucleus into the oyster

Q 4. What is the effect of cold water on molluscs?
A. it reduces the risk of infection
B. it slows down their metabolism
C. it allows them to accept a larger bead
D. it causes them to open their shells slightly

Q 5. What is a cultured pearl?
A. a pearl grown naturally with a lot of pearl culture
B. a pearl grown naturally in an oyster seeded by human intervention
C. a pearl grown naturally in a laboratory
D. a pearl reconstructed in a laboratory

Q 6. Which type of cultured pearl was developed first?
A. Akoya C. South Sea
B. Tahiti D. Freshwater

Q 7. Today, natural pearls are
A. rare C. in big demand
B. common D. mainly found in rivers

Q 8. Akoya oysters can be nucleated
A. two or three times C. in the adductor muscle
B. in the mande tissue D. with several small nuclei

Q 9. Cultured pearls only come from japan
A. true B. false

Q 10. Who is considered the founder of the pearl culturing process?
A. Mikimoto C. Nishikawa
B. Saville-Kent D. Mise

Q 11. What unit of measurement is used to measure the diameter of a cultured pearl?
A. millimetre C. inches
B. centimetre D. momme

Q 12. The three main saltwater cultured pearl types are Akoya, Tahiti, and
A. Keshi C. South Sea
B. Blister D. Persian Gulf

Q 13. What is an Akoya Pearl?
A. a Chinese freshwater cultured pearl
B. a Japanese cultured pearl from lake Biwa
C. a cultured blister pearl
D. a cultured saltwater pearl produced mainly in japan and China

Q 14. How long does it take before a good quality Akoya pearl is ready to be harvested?
A. 3 months C. 1 to 2 years
B. 6 months D. 3 years

Q 15. Akoya cultured pearls usually do not grow above the following size
A. 9 mm C. 16 turn
B. 12 mm D. 20 mm

Q 16. The majority of freshwater pearl farmers use
A. bead nucleation C. tissue nucleation
B. keshi nucleation D. blister nucleation

Q 17. Most of the world's freshwater pearls are cultured in
A. China C. USA
B. Japan D. Australia

Q 18. A Mabe pearl is
A. another name for a cultured half-pearl
B. another name for a natural blister pearl
C. another name for a freshwater pearl
D. another name for an imitation pearl

Q 19. One of the main differences between Akoya cultured and South Sea cultured pearls is
A. the larger size C. the lack of colour
B. the lustre D. the shape

Q 20. Indonesian South Sea Pearls are
A. cultured in m oyster species found only in Indonesia
B. processed in Indonesia
C. sold only in Indonesia
D. generally smaller than Australian South Sea Pearls

Q21. In Australia the majority of Pintada Maxima oysters are
A. bread in hatcheries
B. collected in the wild
C. grown from imported spat
D. imported from Indonesia and the Philippines

PEARL COURSE EXAMINATION CONTINUED

Q 22. The two groups of the Pinctada Maxima are the silver-lipped and
A. pink-lipped
B. black-lipped
C. gold-lipped
D. brown-lipped

Q 23. The organ that lines the inside of a mollusds shell is the
A. bead
B. gonad
C. mantle
D. pearlsac

Q 24. When a large nucleus is inserted into a mollusc, it usually
A. increases the risk of mortality
B. is rejected because the mantel tissue is too thin
C. interferes with their internal organs
D. cannot produce enough nacre to cover the large nucleus

Q 25. Pearl farmers try to locate their farms in areas that are
A. close to a city
B. warm and sunny most of the year
C. native to the mollusc they cultivate
D. convenient to local cultured pearl wholesalers

Q26. To be chosen for nucleation, a black-lipped oyster must be
A. male
B. female
C. at least seven years old
D. healthy and have a fully developed gonad

Q 27. What is the minimum nacre coating imposed by the Tahitian Government inspection for Tahiti cultured pearls?
A. 0.5 mm
B. 0.8 mm
C. 1.0 mm
D. 1.5 mm

Q 28. When other characteristics are equal, bigger pearls have
A. greater value
B. shaper lustre
C. more blemishes
D. darker colours

Q29. What is the length of a princess cultured pearl necklace?
A. 30-32 cm
B. 40-50 cm
C. 70-90 cm
D. 100 cm

Q 30. Which feature is most important to the beauty of a pearl?
A. size
B. shape
C. lustre
D. price

Q 3 1. Which of the following would most likely lower a pearl's value?
A. neutral colour
B. minor blemishes
C. chalky appearance
D. farming region

Q 32. Silver nitrate coloured pearls are
A. black
B. green
C. silver
D. gold

Q 33. X-ray will enable to
A. check a pearl's colour
B. examine nacre layers
C. see a pearl's internal structure
D. determine the pearl's chemical composition

Q 34. Is it-better to keep the pearls
A. in a safe deposit box
B. under a good spotlight
C. wrapped in aluminium paper
D. wrapped in cotton cloth

Q 35. Avoid exposing pearls to direct sunlight or hot spotlights in a shop window, because
A. it will inflate the pearls and create blisters
B. it will dehydrate the pearls
C. it will darken the colours
D. it will absorb ultraviolet, dangerous for your potential customer

Q 36. The most important goal for a jewellery sales professional is
A. having a good knowledge of the pearls and to educate your customer
B. using good selling aids
C. having a professional appearance and sell your stores overstocked inventory
D. having a good back-up advertising campaign and helping your customer to make a buying decision.

Q 37. Jewellery sales people who are trying to sell pearls should never wear them in the shop
A. true
B. false

Q 38. To buy and sell cultured pearls you must
A. deal in very large quantities
B. deal only in high-end goods
C. specialize in one type of pearls
D. know the product and your customer

Q 39. Most retail stores buy pearls from
A. processors
B. pearl farmers
C. at auctions
D. from domestic dealers

Q 40. When you get an objection form your customer
A. offer to reduce the price
B. thank your customer for coming in
C. show a selection of lower-price items
D. answer it immediately and ask probing questions

PEARL COURSE ANSWER GRID

Complete and post cheque for $33 (Incl. GST) to:

PEARL COURSE
JEWELLERY WORLD
P.O. BOX 54
CAMDEN NSW 2570

(please print clearly)
NAME _____
BUSINESS NAME _____
BUSINESS MAILING ADDRESS _____
_____
_____
_____
BUSINESS PHONE _____
SIGNATURE _____

	A	B	C	D		A	B	C	D		A	B	C	D		A	B	C	D
1.	☐	☐	☐	☐	**11.**	☐	☐	☐	☐	**21.**	☐	☐	☐	☐	**31.**	☐	☐	☐	☐
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6.	☐	☐	☐	☐	**16.**	☐	☐	☐	☐	**26.**	☐	☐	☐	☐	**36.**	☐	☐	☐	☐
7.	☐	☐	☐	☐	**17.**	☐	☐	☐	☐	**27.**	☐	☐	☐	☐	**37.**	☐	☐		
8.	☐	☐	☐	☐	**18.**	☐	☐	☐	☐	**28.**	☐	☐	☐	☐	**38.**	☐	☐	☐	☐
9.	☐	☐			**19.**	☐	☐	☐	☐	**29.**	☐	☐	☐	☐	**39.**	☐	☐	☐	☐
10.	☐	☐	☐	☐	**20.**	☐	☐	☐	☐	**30.**	☐	☐	☐	☐	**40.**	☐	☐	☐	☐

Buccaneer Archipelago – region in NW Australia where Australian South Sea Pearls are grown.