Basic Detail Report

00044142

Title

Three half-sphere nuclei

Date

1957-1977

Primary Maker

Denis George

Medium

Epoxy

Dimensions

Overall: 8 x 21 x 21 mm, 233 g

Name

Nuclei

History

Denis George (1917-2001), a post-World War II Greek Migrant, was a self-taught pearl maker who found his own way to culture pearls and spent decades from the 1950s to the 1980s experimenting and trying to improve his products. His ambition was to culture a unique Australian pearl. He produced pearls mainly from 'Pinctada maxima' (gold lip pearl) and 'P. Margaritifera' (black lip pearl). He was a maverick in the Australian and Papua New Guinean pearl industry because he refused to collaborate with Japanese pearling companies who dominated pearl culture by keeping their technique secret and forming joint ventures with nationals. Denis George was never commercially successful but his achievements were remarkable. Not only did he develop his own way to seed pearl oysters, but he also pioneered the culture of pearls from 'Pteria penguin', a bivalve known as Butterfly Shell which was not then a recognised pearl shell. He was recognised in Japan for his pearling achievements, but was not well known in Australia. His efforts extended beyond his own individual interests, in lifelong attempts to establish locally owned and run pearl culture industries in Australia and Indo-Pacific countries. He also strove for recognition of the naturalist William Saville-Kent as the true originator, around 1890, of the cultured pearl technique which the Japanese later claimed as their own and developed as an industry. The purpose of traditional pearling was to collect pearl shells, which were processed as mother-of-pearl. Before the advent of synthetics, mother-of-pearl was an important commodity for many products, most notably pearl buttons and jewellery. Very occasionally natural pearls were found in pearl shells. Pearl shell was collected by divers working off pearl luggers around the coasts in tropical waters. Although the demand for mother-of-pearl has dwindled over the past 50 years, the Australian pearl culture continues with the production of cultured pearls. Pearls

are naturally formed when a foreign object enters a mollusc and attaches to its flesh, such as a piece of coral, shell or a small snail. This object is coated with layers of nacre - a calcium carbonate substance produced by the mollusc as a means of coating the irritant and protecting itself. Nacre is more commonly known, once it has coated the inside of the shell, as mother-of-pearl. To cultivate pearls, divers collect shells from sea beds and bring them to the pearl farm for seeding. The shells are opened, a nucleus is inserted inside, then the shell is closed and returned to the sea for anywhere between 6 months and 6 years. If successful, the mollusc secrets nacre around the nucleus and a pearl is formed. There are essentially two types of cultured pearls: those which are cultured on the flesh of the mollusc (referred to as spherical pearls), and those which are cultured on the inside shell of the mollusc (referred to as half-pearls, mabe pearls or blister pearls). To cultivate a spherical pearl a piece of mantle from a living mollusc is grafted onto the recipient mollusc flesh, onto which a small spherical nucleus is inserted. The shell is then closed and returned to the sea - about half of the shells reject the nuclei or die. Denis George adapted dental instruments to make the tools for these delicate operations which were done either on the deck of a boat, or on a jetty which was more stable. The operating set-up included a stand with a clamp to hold the shell, tongs to open it, wooden pegs to keep it open, a light to illuminate inside, a magnifying glass, a scalpel to make an incision, and a long-handed scoop to hold and insert the nucleus. He experimented with a range of nuclei materials throughout his career, including soapstone, shell and plastic. Half-pearls (mabe or blister pearls) are cultured by gluing nuclei (or plastic domes in modern production) directly onto the inside of the pearl shell. As for the cultivation of spherical pearls, the shell is then closed and returned to the sea. When the shell is harvested, the nacre covered domes (now referred to as half-pearls or blister pearls) are sawn out of the shell and the nuclei or plastic dome removed. The half-pearl is then sprayed with pearl essence - a substance made from fish scales - so its colour is not affected when it is filled with epoxy resin. The half-pearl is either backed with mother-of-pearl or matched with an alike half-pearl to look like a spherical pearl. These cultivated half-pearls are used for a variety of earrings, pendants and other jewellery. Other shapes can be produced by using teardrop or heart shaped nuclei. One innovation of which Denis George was particularly proud was a formation in the shape of a cross, which he first produced accidentally and went on to replicate several times. In addition to round and other shaped blisters, Denis George sawed and polished pearl and other shells to make a variety of buttons and costume jewellery. For these processes, Denis George improvised grinding, drilling and polishing machines, the major pieces of which are included in the museum's collection.