Experimental Mabé/Image Pearl Production at Vizhinjam

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Early in the 1890s Kokichi Mikimoto long with Tokichi Nishikawa and atsuhei Mise succeeded in cultivating ound/full pearls in oysters, although aville-Kent, an Australian, is now lieved to deserve the credit for the iginal technique. At the same time ench scientist Louis Boutan produced e first hemispherical (Mabé) pearls in alone, but because of difficulties with e abalone species it was not ntinued as a commercial venture at t time. Cultured pearls possess the me properties as natural pearls. ltured pearls are produced in an ost identical fashion as natural ones h the only difference that a person efully implants the irritant (nucleus) d pearl forming tissue in the oyster, her than leaving it to chance and owing the nature to do the rest to ate the wonder that we call pearl. arly all pearls sold today are cultured arls.

Mabé pearls are cultured pearls but ke full or spherical pearls one side Mabé is without natural nacre coating. bé pearl was named after the Mabé arl oysters (*Pteria penguin* and *P. ma*) which are found mainly in the ical seas of Southeast Asia and in Japanese islands around Okinawa. e past, several attempts were made ultivate spherical pearls from the bé oyster but all failed. However, in 1950s hemispherical pearls or 'half arls' were successfully produced them. Today, most of these cultured bé pearls do not come from the Mabé er, but rather from the silver-lipped er *Pinctada maxima* and to a lesser t from black lipped pearl oyster *P. garitifera*. Blue South-sea Mabé s with highly iridescent nacre are duced in New Zealand from the one *Haliotis iris* (Class: ropoda).

Mabé or blister pearls are grown nst the inside shell of an oyster than in the animal's soft tissues. ould/nuclei made of plastic, shell

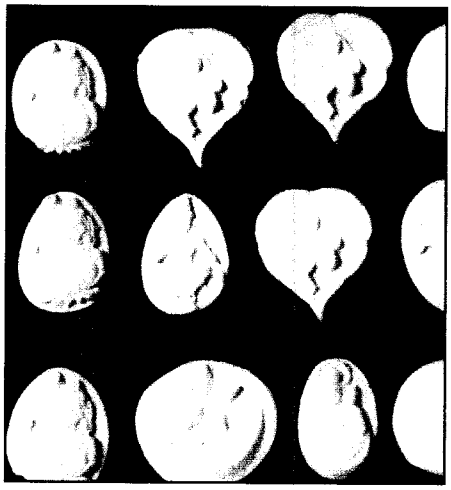
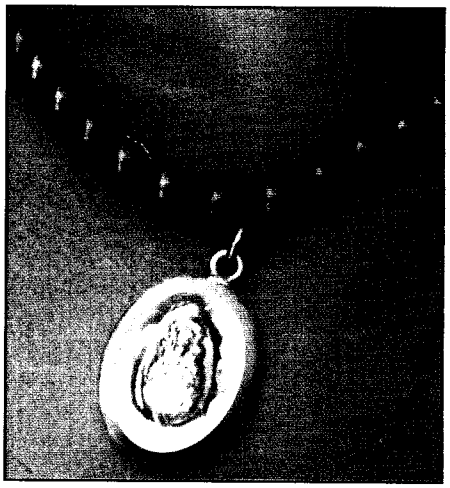


Image for implantation

Partially coated Lord Krishna as a baby lying on a banyan leaf

Fully coated Holy Cross



Pearl string with Mabé pendant

powder, clay or glass is inserted or cemented to the mollusc's inner surface of the shell (between the pearl oyster's inner surface of the shell and body or mantle). The mould/nuclei can have different sizes and shapes, such as hemispherical, heart, button, drop, oval or an image. Mantle that covers the mould starts to deposit the nacreous layer around the foreign body/mould to produce layers of nacre over the mould. Once the hemispherical nucleus is covered with sufficient amount of nacre, the pearl is cut away from the shell (in some cases the plastic mould/bead is taken out, and the cavity filled with a substance such as epoxy resin and back side is covered by a mother-of-pearl plate). Mabé pearls are typically used in pendants, studs or rings that cover their flat or irregular back side.

Mabé pearls are grown in Japan, Indonesia, French Polynesia, Australia and New Zealand. Mabé pearls range from light pink to rose to bluish in colour. In India, technology for production of Mabé pearl in freshwater mussel *Lamellidens marginalis* was already developed by Central Institute of Freshwater Aquaculture. Central Marine Fisheries Research Institute (CMFRI) has achieved experimental success in

the production of Mabé pearls in *Pinctada fucata* using pallial insertion method at port Kollam (Mohamed *et al.*, In Book of Abstracts, First Indian Pearl Congress and Exposition, CMFRI, 2003)

Vizhinjam Research Centre of CMFRI has recently developed a simple and unique technique for the production of Mabé/image pearls. The technique developed also includes method to produce quality images for implantation using metal templates. Metal templates of required shape, design and size were first made. Then shell cement prepared using black clam shell (*Villorita cyprinoides*) was used to make the images.

Pearl oyster *Pinctada fucata* of size more than 75 mm DVM cultured in cages suspended from the raft kept in the Vizhinjam Bay were used for the trials. The oysters were cleaned and stocked in FRP tanks containing seawater. Next day oysters were kept outside water in order to induce the animals to open the shell. The shell valves were pegged when they were open. Then these pearl oysters were clamped to the surgery stand. Care was taken to prevent injury of adductor muscle of oysters while opening. The areas for implanting were selected and the image was glued using commercially available quick drying adhesives. Multiple implantations could be made on both the shell valves depending on the size of the oyster. Care should be taken in selecting the size of the image and the position of implantation so that there will not be any difficulty for the animal to open and close the shell valves later. After the nucleus had been glued, the animal was kept in tanks with running seawater. Next day they were put back in the sea in rectangular cages. These oysters did not require any care other than monthly cleaning.

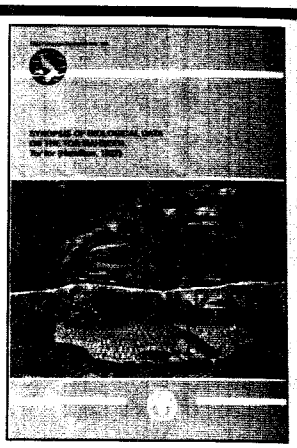
It requires 60 to 90 days to get proper nacre coating over images. The oysters were brought to the laboratory and examined for the level of coating. Those with required coating were cut open. The shell along with the image pearl was washed in freshwater and further cleaned by immersing in dilute hydrogen peroxide to remove substances that could change their colour. From such cleaned shells the images were sawed off. They were then fashioned to size so that they could be u making jewellery. Images of size between 10 to 20 mm were im and harvested. Another advan this method is that post op mortality and rejection are alm compared to the pallial in method. This technique is now improved for commercial appl The implantation technique for pearl production is very simple be done by rural fisherfol appropriate training and surprisin gestation period is very short compared with spherical production. The risk involved is v as the animal can be opened inspected to assess the level of c They can make a very good f statement when used in conju with other pearl jewellery or alo they can be produced in surp varieties of unique and unu shapes, thus making them appropriate for jewellery design who want to produce unique creati Marine image pearls can fetch h price depending on the quality, and lustre.

FAO Releases Synopsis of Tor mahseer

Dr. V.R. Desai

The Food and Agriculture Organisation (FAO), Rome, has published (2002) a synopsis of biological data on *Tor tor* (Hamilton), Tor mahseer, an important food and game fish of India. The synopsis was prepared by Dr. V.R. Desai, Retd. Principal Scientist, Central Inland Fisheries Research Institute (Indian Council of Agricultural Research) Barrackpore (West Bengal). Dr. Desai officiated as Director of the Institute and also worked as Head of the Reservoir Division, CIFRI, Bangalore (Karnataka). While working in Narmada-Tapti Unit of CIFRI at Hoshangabad (M.P.) from 1958 to 1965, Dr. Desai studied in detail the fishery and biology of *Tor tor* (Ham.) in a 48km stretch of river Narmada near Hoshangabad (M.P.). Based on this work, Ph.D. degree was awarded to Dr. Desai by Agra University (1982): He was guided in his work by Late Padmashri Dr. V.G. Jhingran, Ex-Director, CIFRI, Barrackpore (W.B.). As seen from this contribution of Dr. Desai, the FAO had assigned him the work of preparing a synopsis of biological data on *Tor tor* (Ham.). Prior to this the honour of writing such synopsis for FAO on five freshwater fish species from India went to Dr. T.V.R. Pillay, Dr. V.G. Jhingran, K.H. Alikunhi and H.A. Khan.

The synopsis is the compilation of biological data of *Tor tor* (Ham.), Tor mahseer collected from different sources in India. Among Indian mahseers, Tor mahseer is the most important one after *Tor putitora* (Ham.) and constitutes an outstanding fishery in Narmada river (Central India). It has also established itself in some of the Indian reservoirs consequent to their stocking. However, with erection of dams and formation of reservoirs across the rivers the natural breeding grounds of the fish are being destroyed and the brood and juvenile fish are also being



killed indiscriminately. The mahse fishery of India is declining as a result low recruitment of the fish. Stocking rivers and reservoirs with mahseer therefore essential for restoration of fishery. The detailed information on biology of *Tor tor* (Ham.) such as fo breeding and age/growth incorporat in this synopsis will be very useful planning the development of mahseer fishery in India.