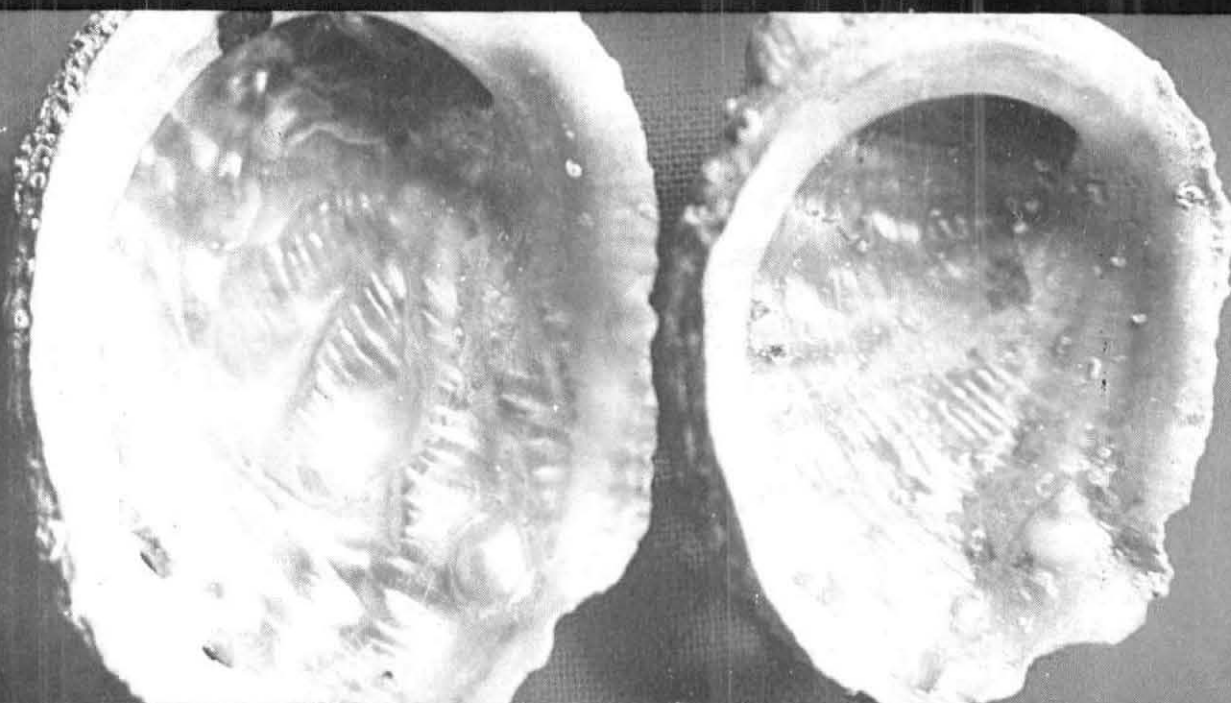




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**Experimental production of half pearls from tropical abalone *Haliotis varia* (Linn.) at Mandapam**

Abalones are one among the few molluscs known for producing gem quality pearls and highly priced meat. The nacre of abalone shell is often multihued in tines of silver, orange, pink, green, blue and lavender. The abalone pearls are superior to pearls produced from

freshwater mussels and comparable to best marine pearls. History of abalone pearls dates back to 5000 BC. The first recorded reference occurs in one of the Japanese oldest historical writing, the Kojiki. (ca. 800 AD). Production of pearls from cultured abalones is of recent

origin. The French scientist Louis Boutan carried out pioneering work on abalone pearl production in 1897. He successfully produced semi-spherical pearls from abalones. Later, several workers refined his technology and in mid 1950s, Dr. Kan Uno was very successful in growing hemispherical pearls in several abalone species. But attempts to produce free pearl did not give any encouraging results. Now, abalone pearl farms producing blister pearls are existing in various countries.

**Half pearl production :** CMFRI achieved initial success in the half pearl production from abalones during 1998-'99 at its regional centre, Mandapam. Earlier attempts to produce pearls in abalone by fixing a nucleus on the inner side of the shell of the animal was not successful due to dislodgment of the nucleus by powerful foot movement of the animal. Due to sustained efforts a comprehensive method was developed and pearl production became a reality.

Abalones of good health, without any physical injury and unaffected by borers are segregated from the natural collection and maintained in the laboratory with seaweed *Ulva* sp. as feed. The abalones are taken out from the tank and air dried for 10 minutes prior to nucleus fixing process. This enables the easy retrieval of the foot muscle for drilling at the appropriate site.

Drilling is done on the inner side of the shell, by pushing the mantle to the maximum possible extent, using an electrically operated hand drill with a fine drill bit (3 mm). Extreme care should be taken to avoid any sort of physical injury to the animal. Drilling is done in one swift action and the drilled abalones are returned to a recovery tank containing well aerated seawater immediately after drilling. This enables the abalones to recover from the drilling shock as well as getting rid of the drill dust.

After half an hour, the drilled abalones are taken out from the recovery tank, their mantle is pushed aside with the aid of a sterile scalpel's blunt end and the inner shell is wiped with cotton. The commercial grade adhesive Anabond is used as a fixative. A drop of the glue is placed in the hole and spread on the edges of the drill hole, immediately followed by placing a shell bead (used for marine pearl culture) of required size (4 mm) with fine tweezers and gentle pressure is applied on the nucleus till the adhesive is completely dried. The animal is returned to FRP tank with running seawater and aeration.

Active abalones having nucleus are collected on subsequent day and stocked in conventional box type cages knitted with appropriate size mesh and suspended into sea from the rack. Feeding is done at bi-weekly intervals by placing seaweed *Ulva* sp. inside the cage. Monthly observation is done to check the nacre coating, mortality etc. At the end of first month, slight nacre coating could be observed over the nucleus. The stocked abalones are harvested on 4th month when the nucleus has thick and uniform nacre coating. About 40% of the abalones had good nacre coating in the experiments.



Drilling on the inner side of the abalone shell

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