

Pearl Formation

By,
Dr. Purnima Das Bora
Associate Professor
Dhing College



• INTRODUCTION :-

Pearl is a concretion formed by molluscs . It consists of nacre or mother of pearl . The nacre is formed of two substances , namely a calcium carbonate which is in the form of aragonite or calcite and an albuminoid substance called conchiolin . Kokichi Mikimoto of Toba (Japan) is known to be the father of pearl industry . He discovered a method to

induce foreign particle between the mantle and the shell of the pearl oyster and thus stimulated pearl formation .

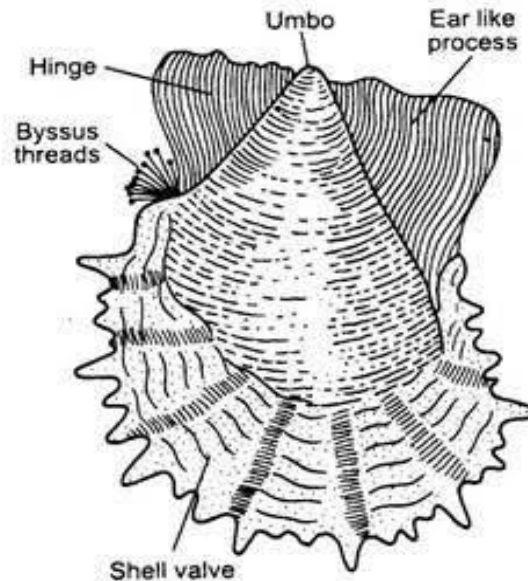


Fig . 1 : Pinctada vulgaris

• Pearl formation :-

The pearl of oysters produce pearl as an adaptation against outside material . When a foreign material enter the body such as a particle of sand or a small parasite , it adheres with the mantle . The mantle epithelium starts secreting concentric layers of nacre around the foreign material . The completed structure is called pearl .

Most precious oysters are found in pearl oysters of the genus *Pinctada* . Important species for pearls are *P. vulgaris* , *P. chemnitzii* , *P. margaritifera* , *P. anomioidea* and

***P. atropurpurea* found in Indian waters . *P. vulgaris* which is closely allied to fresh water mussel is common species distributed in gulf of Kutch , gulf of Mannar and the Palk Bay and Baroda .**

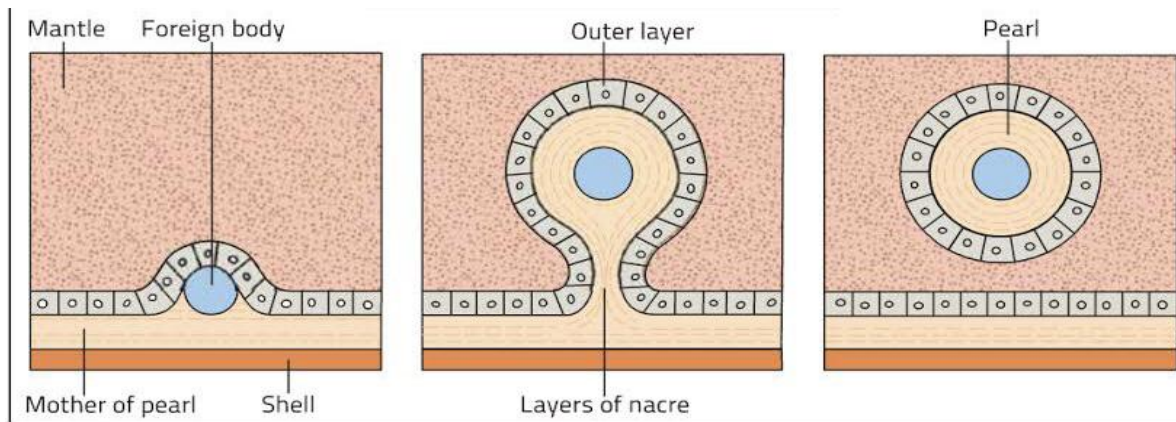


Fig.2 : Pearl formation

• **Culture of pearls :-**

The culture of pearls is a complex but sensitive process . It involves the following steps :

- 1. Collection of oysters**
- 2. Preparation of graft tissue**
- 3. Preparation of nucleus**
- 4. Implantation**
- 5. Rearing of oysters and**
- 6. Harvesting**

- **Collection of Oysters :**

Oysters for pearl culture are obtained by three methods . They are as follows :

1. Pearl oysters are collected from the bottom of the sea .
2. *Spats* (young oysters) are collected by placing cages in spat–falling areas of the sea .
3. In the laboratory eggs of pearl oysters are fertilized and young ones are obtained .

- **Preparation of Graft Tissue :**

The piece of tissue which is inserted into the oyster is called *graft tissue* . It is cut off from the mantle of another oyster . The graft must be in the form the mantle of another oyster . The graft must be in the form of a square of 2 x 2 mm in size .

- **Preparation of Nucleus :**

The nucleus is a foreign material which is inserted into the oyster . It in the form of a bead of 2 mm in diameter . It is prepared from the shell of molluscs .

- **Implantation :**

The oyster is placed on a table . The foot is exposed . A small incision is made on the foot.

On this incision the graft tissue is placed . Then the oyster is released in cages . The entire operation should be completed in 30 minutes .

- **Rearing of Oysters :**

The operated oysters are placed in cages and the cages are suspended from rafts in the sea . This type of culturing oysters is called *raft culture* .

- **Harvesting :**

Pearls attain their maximum size in three years . After three years , the oyster are removed from cages and the pearl is taken out .

• **Suggested Books :**

- 1. A TEXT BOOK OF INVERTEBRATES
BY NAIR , et al ;
SARAS PUBLICATIONS , 2014 .**
- 2. A TEXT BOOK OF ANIMAL DIVERSITY ,
BY R.L KOTPAL
RASTOGI PUBLICATIONS, 2020 .**

