

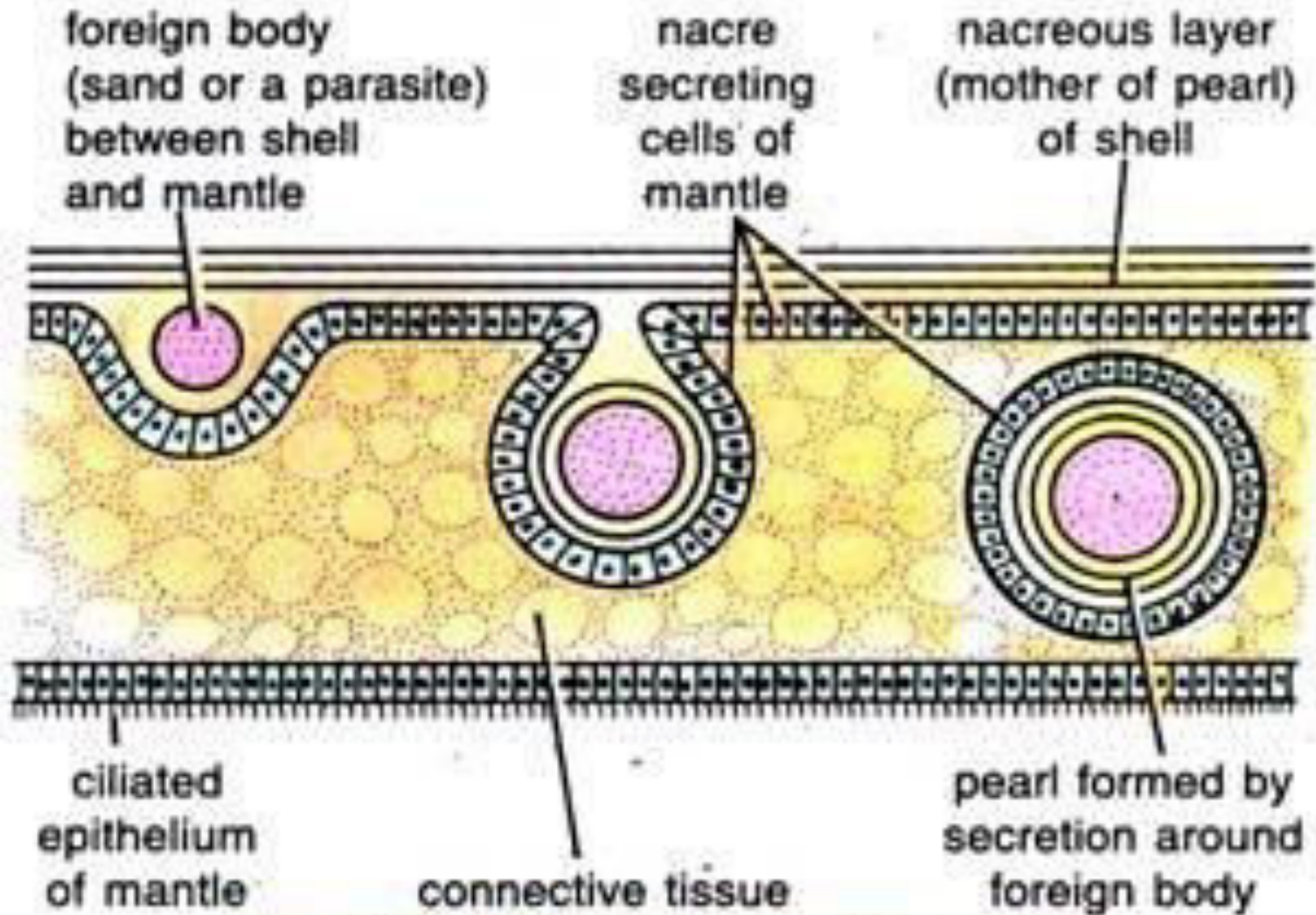
# Pearl formation in bivalves (SEM II, CC –III)

Sreenita Ghosh

Department of zoology,  
B. C. College, Asansol.

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- Pearl is a valuable gem known to mankind since ancient times. The pearl, in fact, is of animal origin and produced by certain bivalves of Mollusca. The pearl producing bivalves are marine oysters of the genus *Pinctada*, though some freshwater bivalves of the genus *Unio* and *Anodonta* also produce pearl but of inferior quality and rarely of any use.
- Today, Japan produces the bulk of pearl in the world by using pearl culture technique. However, the culture of pearl, its fishing and its commercialisation, etc., constitute a separate story. Here we are concerned only with the way of the formation of pearl in the body of a bivalve.



**Fig. 63.3. Stages in pearl formation.**

- As the oyster grows in size, its shell must also grow. The **mantle** is an organ that produces the oyster's shell, using minerals from the oyster's food. The material created by the mantle is called **nacre**. Nacre lines the inside of the shell.
- The formation of a natural pearl begins when a foreign substance slips into the oyster between the mantle and the shell, which irritates the mantle. The pearl is secreted by the mantle as a protective measure against foreign objects like sand particles, parasites, small larvae or any object of organic and inorganic origin. It's kind of like the oyster getting a splinter.

- In fact, as soon as a foreign object, somehow, enters the body of a bivalve in between the shell and mantle, the mantle immediately gets irritated and at once encloses it like a sac. The mantle wall then starts secreting layers of nacre around the foreign object from defence point of view.
- Thus, mantle wall secretes continuously several layers of nacre around the foreign object and finally pearl is formed. The value of pearl depends upon its size, quality, etc. Now a days, the pearl producing bivalves are reared and pearls are produced artificially by introducing some foreign objects between the mantle and shell in the different parts of the world; Japan has surpassed all other countries in this field.

