

The formation and processing of pearls

[Science](#), [Geography](#)



The paper " The Formation and Processing of Pearls" is an excellent example of an assignment on geography.

Oysters or mollusks are responsible for the natural production of pearls (Video on How Pearls are Formed Naturally). Such creatures live in water and feed on planktons. Occasionally a grain of sand or a parasite lodges inside the inner soft body of the mollusk or the oyster, resulting in significant discomfort for the water creature. The animal is unable to expel the foreign organism or sand. Instead, it engages a defense mechanism that protects itself. It begins to secrete a smooth, hard crystalline substance that deposits around the foreign object.

The oyster will continue to secrete the substance as long as the foreign substance is still in its body. Eventually, the crystalline substance will completely encase the foreign object or parasite. The substance is calcium carbonate based (nacre). The nacre becomes the pearl. Pearls contain millions of microscopic crystals aligned perfectly next to each other that allow reflection and refraction of light. Over the years, man has tried to make pearls in the laboratory outside the oysters but with no success. Hence, the only way of producing the pearls is through culturing of oysters in water farms- docks.

In Japan, the Japanese Akoya Farms harvest their oysters from such docks (Japanese Akoya Pearl Farming). The pearl farmers first nucleate the oysters; tend them for two years before harvesting them. Winter improves the luster of the pearls as it slows the metabolism of the oyster giving it enough time to develop. Later on, there are special machines that the farmers use to separate the soft tissues of the oysters from the pearls.

The machines separate the pearls from the remaining soft tissue parts of the oysters after removing the edible parts. The machines spin to facilitate separation. The operator adds a small amount of detergent in the water containing the pearls with the soft tissues. The pearls are heavy and, therefore, settle at the bottom of the container. After separation, the farmer rinses and sorts the pearls into low and high-quality categories. The workers take high-quality pearls to the factories and sort them by size, body color, and luster. They then drill holes through them, especially where there are blemishes. The pearls are now ready for use after polishing them.