



LIMULUS

THE HORSE SHOE CRAB

The ancient marine living fossils that remained nearly unchanged

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LIMULUS belongs to the class Arachnida and is in the order Xiphosura. It is commonly known as King crab or Horseshoe crab. It is considered a living fossil that remained unchanged for millions of years. Despite the name of this ancient creature, horseshoe crab, they are not crabs but rather marine arthropods. Since their body has a hard exoskeleton and resembles the horse foot, they are named so, “Horseshoe crabs”.

Limulus polyphemus, the American horseshoe crab, is found in the Gulf of Mexico and along the Atlantic coast. These crabs are caught for use as fishing bait and in biomedicine. They play a major role in the local ecosystem, with their eggs providing an important food source for shorebirds, and sea turtles eat the young and adults. These crabs are eaten in some parts as food, but most people catch them for the lucrative blue blood that fetches 60000 dollars/gallon. The crabs are

bled and returned to the ocean for collection of these crabs blood. About 30 per cent of these crabs die after bleeding. However, the blood volume returns to normal within a week in the remaining crabs. But, they are weaker and less likely to mate. This raises concerns about the long-term effect of harvesting on these crabs.

Unusually, the blood of these crabs is blue due to the presence of a copper-based respiratory pigment called haemocyanin, which also contains amoebocytes. These amoebocytes are very sensitive to toxins from bacteria thereby protecting the crabs from microorganisms that cause diseases.

A protein in its blood called Limulus Amoebocyte Lysate (LAL) is also used by biomedical industries. This protein is a blood clotting agent, and biomedical industries use it to quantify bacterial endotoxins and test several bacterial diseases.