

# The Living Fossil (Horseshoe crab)

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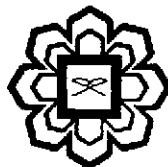
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## CHAPTER – 28

### Evolution of horseshoe crabs – paleontological and Molecular viewpoint

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#### Abstract

Horseshoe crabs are unique group of animals remarkably retaining their genetic makeup virtually unchanged for the past 150 million years. The first fossil record of the basic xiphosurid horseshoe crab body plan has been extended back to the Late Ordovician Period, about 445 million years ago. Horseshoe crab body fossils are exceptionally rare and are found mostly in shallow coastal and marginal marine Konservat-Lagerstätten deposits. Their irregular occurrences document their diversity during post-Cambrian period with a morphological and taxonomic peak in the Late Paleozoic Era. They have undergone minor secondary radiation during the Triassic Period. Overall, the rarity of fossil xiphosurids reflects both taphonomic biases inherent in the unusual conditions required for preservation of their non-biom mineralized exoskeletons and complex ecological factors related to a long-term association with shallow marginal aquatic habitats. Recent studies on their molecular phylogeny have speculated that the evolution of horseshoe crab might probably from ancient aquatic insects.

**Key words:** horseshoe crabs, evolution, xiphosurids, living fossil, fossil records.

#### Introduction

Horseshoe crabs are one of the remarkable group of animal attracted the attention of evolutionary biologists and paleontologists to discover their origin and adaptability over millions of years. Their genetic makeup has virtually unchanged since Ordovician Period (445 million years ago)