National Paelenotology Science News

Pterygotid Sea Scorpions Not High Level Predator

Research by scientists from New York and New Jersey universities has seriously questioned the long held belief that the *pterygotid eurypterids* ("sea scorpions") were high-level predators in the Paleozoic oceans 470 to 370 million years ago.

Predating the dinosaurs by millions of years *pterygotid eurypterids* was an ocean dwelling arthropod about two and one half feett long with prominent fore claws which were the basis for the previous notion of their high level predation.

"A new study, published in volume 39 of the *Bulletin of the Buffalo Society of Natural Sciences*, Richard Laub (Buffalo Museum of Science) and his colleagues Victor Tollerton (Research Associate, New York State Museum) and Richard Berkof (Stevens Institute of Technology) show that the mechanical constraints on the claw of the pterygotid sea scorpion *Acutiramus* made it incapable of penetrating the external shell of a medium-sized horseshoe crab without danger of rupturing."

The researchers calculate that an applied force of five Newtons was the maximum possible for the claws of *pterygotid eurypterids* making the predation of horseshoe crabs impossible. There is also no elbow joint in the forelimb of the *pterygotid eurypterids* making sufficient mobility to break crab shells impossible.

The researchers suggest the fearsome looking beastie be reduced to the role of a scavenger not a voracious predator.

Journal Reference:
Laub, R.S., Tollerton, Jr. V.P. and Berkof, R.S. **The cheliceral claw of Acutiramus (Arthropoda: Eurypterida): Functional analysis based on morphology and engineering principles**. *Bulletin of the Buffalo Society of Natural Sciences*, 2010; 39: 29