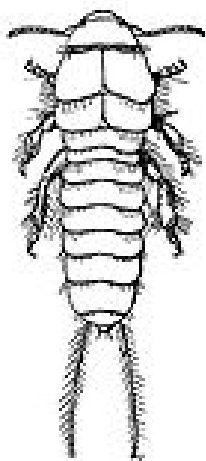


Phylum Arthropoda

A very large group of Invertebrates with an exoskeleton (**carapace**), a segmented body, and jointed appendages. Jointed appendages and other body parts are made of **chitin**, a long chain polymer $(C_8H_{13}O_5N)_n$ or polysaccharide protein. Many arthropods moult their chitin segments, and marine arthropods segmented parts are often biomineralized with calcium carbonate.

Phylum dates back to Cambrian. The number of arthropods alive today outnumber all other invertebrates alive today in either species or number. 80% of all known living species are arthropods.

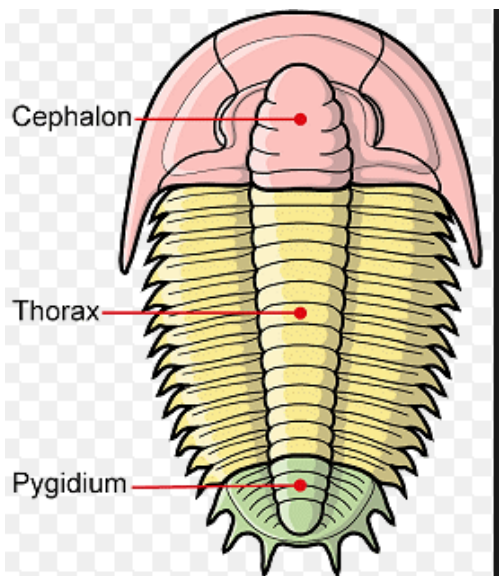


Head

Thorax

Abdomen

Insect Segmented Parts



Cephalon

Thorax

Pygidium

Trilobite Segmented Parts



Phylum Arthropoda

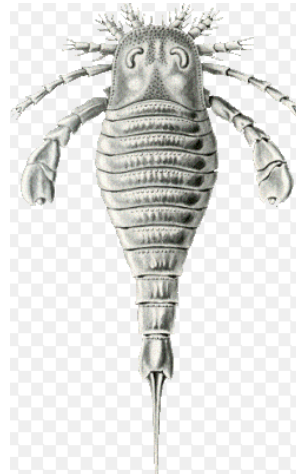
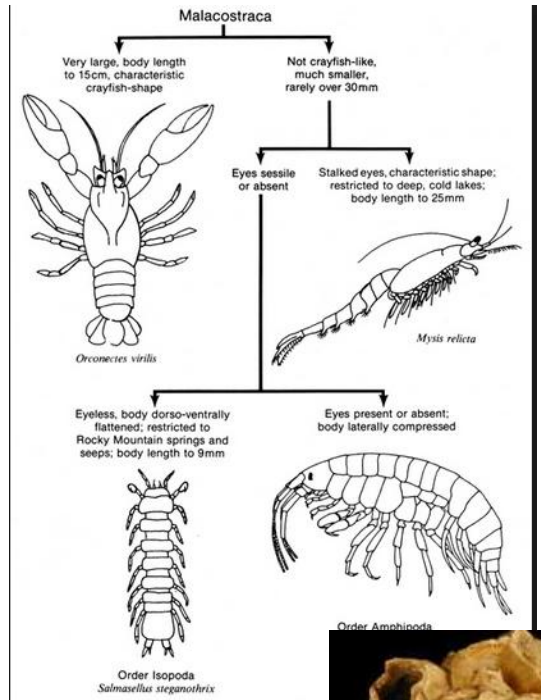
Subphyllum Crustacea

(shrimp, lobster, crabs, barnacles)

Subphyllum Chelicerata

Order Eurypterida *state fossil of New York*

Class Insecta (Insects)



Head

Thorax

Abdomen

Insect Segmented Parts

Phylum Arthropoda – Class Trilobita (Trilobites)

Trilobites roamed most of the world's ocean in the three earliest periods of the Paleozoic Era, suffered major extinctions in the Devonian and then total extinction during the major Permian extinction event. Some species are decent index fossils, but more importantly specific trilobite species are even better as evidence of the paleo-environment at the time. Some were restricted to moving on the seabed and were scavengers or predators, while others were filter feeders. Some required very clear water, some had temperature restrictions. Still others were pelagic and fed on plankton. All moulted as many as 10 times in life and pieces of their shells are often found as the flexible organic cells connecting rigid exoskeleton decayed separating the body parts. When threatened trilobites could coil (or roll up) and they can be found in this rolled position (see photo of *Elredgeops* on next page)

Trilobites were the first group of invertebrates to have eyes although some of the earlier Cambrian species are believed to have been blind.

Class Trilobita

Genus *Cryptolithus*



Class Trilobita

Genus *Calymene*



Phylum Arthropoda – Class Trilobita (Trilobites)

Class Trilobita

Genus *Elrathia*



Class Trilobita

Genus *Isotelus* *



Class Trilobita

Genus *Eldredgeops*

previously *Phacops*