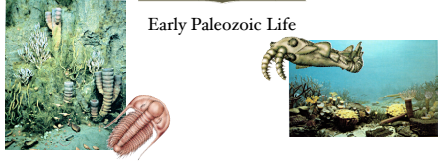
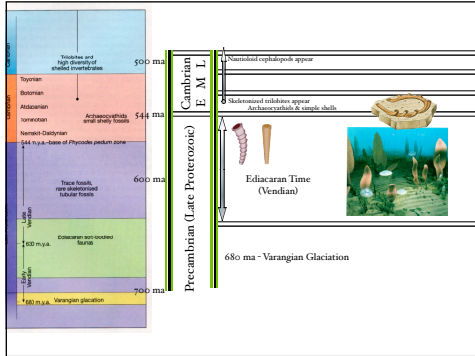


The Precambrian/Cambrian Boundary

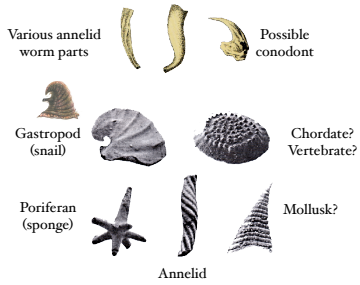


1



2

Very early Cambrian - first skeletal fossils



3

Common Skeletal Materials

- Calcite/Aragonite
 - Porifera
 - Mollusks
 - Echinoderms
 - Brachiopods
- Calcium Phosphate
 - Brachiopods
 - Chordates
- Chitin
 - Arthropods
- Silica
 - Porifera

4

Why did hard parts start appearing in a number of phyla at the base of the Cambrian?

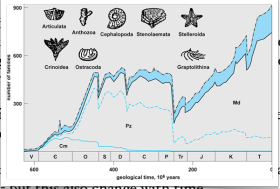
- improved feeding behaviors
- improved locomotion
- improved structural support
- changes in marine chemistry

5

The Base of the Cambrian






At the base of the Cambrian there is an Adaptive Radiation of invertebrates. This includes a rapid appearance of many different types of body plans in many phyla. From the Cambrian into the Ordovician we see a major sequential pattern.

1. Standard groups a 'weeding more line' many e the dized to a
2. Diversifi diversifi en a new
3. Domina systems but this also change with time. ain trophic



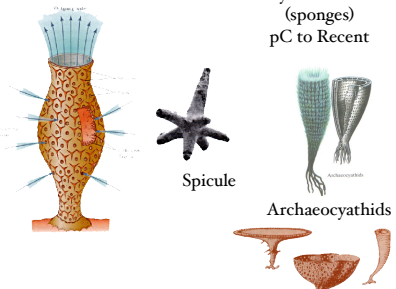
6

Dominant Groups of the Early Paleozoic

-  Phylum Arthropoda - Subphylum Trilobitomorpha
-  Phylum Mollusca - Class Cephalopoda - Order Nautiloidea
-  Phylum Brachiopoda - "Inarticulate Brachiopods"
-  Phylum Mollusca - Class Gastropoda
-  Phylum Echinodermata - "Pelmatozoans"

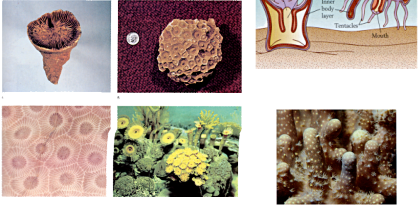
7

Phylum Porifera (sponges) pC to Recent



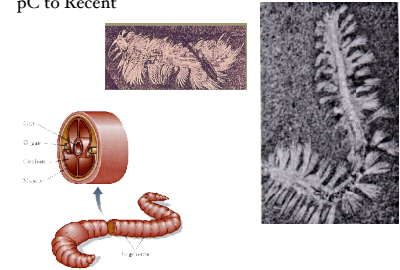
8

Phylum Cnidaria
pC to Recent



9

Phylum Annelida
pC to Recent



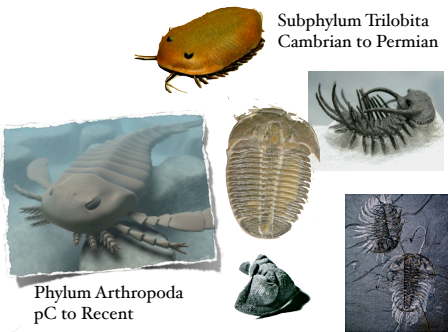
10

Phylum Brachiopoda
Cambrian to Recent



11

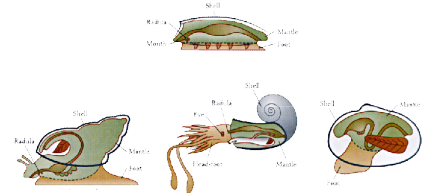
Subphylum Trilobita
Cambrian to Permian



Phylum Arthropoda
pC to Recent

12

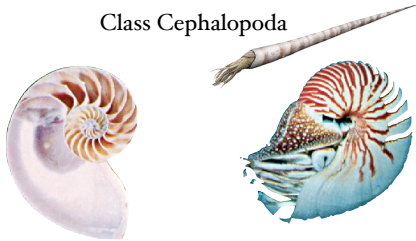
Phylum Mollusca
pC to Recent



Class Gastropoda Class Cephalopoda Class Pelecypoda

13

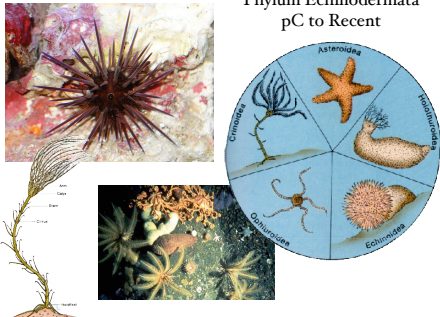
Class Cephalopoda



Squid, Octopusses
Nautiloids, Ammonoids

14

Phylum Echinodermata
pC to Recent

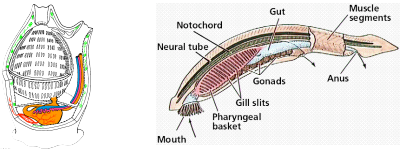


15

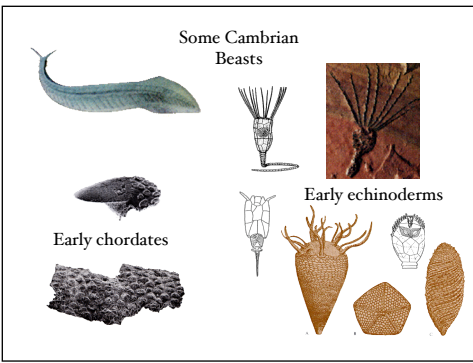
Phylum Chordata
pC to Recent



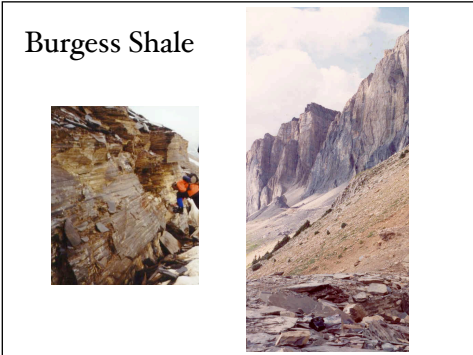
Ambioxus



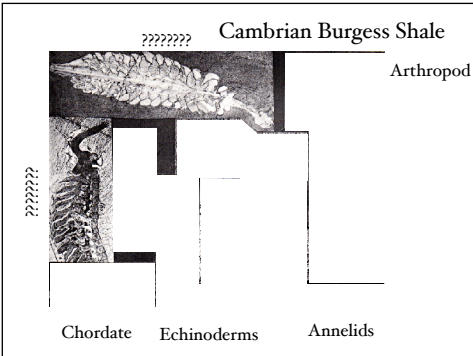
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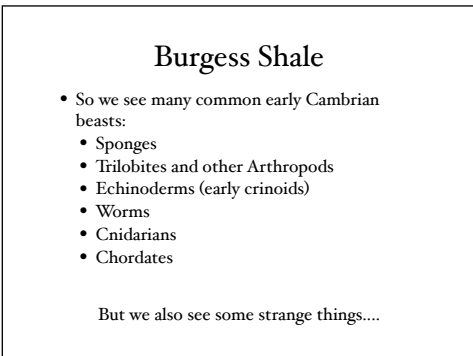
17



18

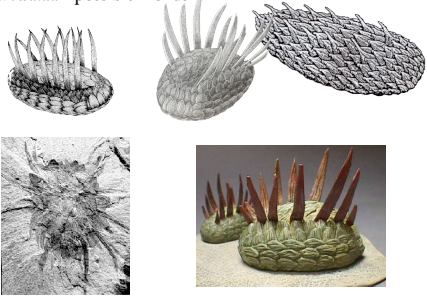


19



20

Wiwaxia - possible mollusk

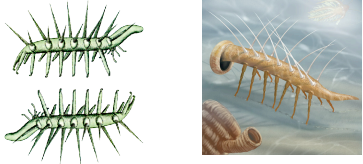


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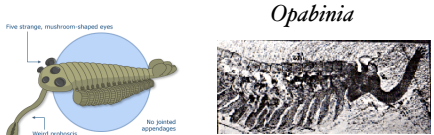


Hallucigenia

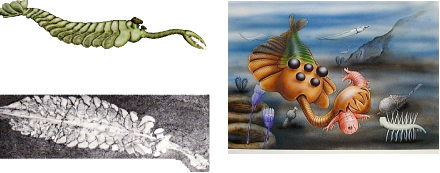
A possible velvet worm???



22



Opabinia



23



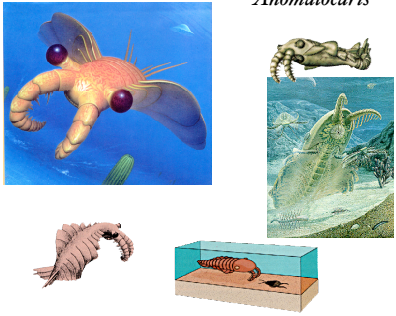
Peytoia

Anomalocaris



24

Anomalocaris

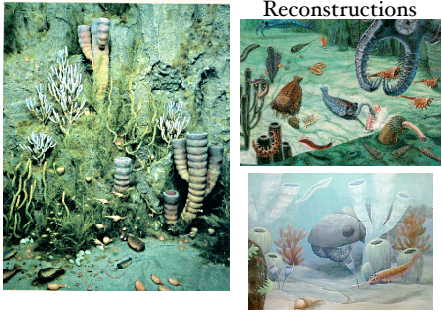


25



26

Burgess Shale
Reconstructions



27
