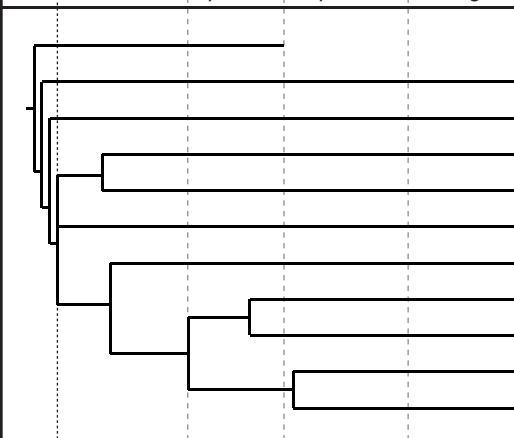


CAMBRIAN

Terreneuvian Epoch 2 Epoch 3 Furongian



'Gilled' lobopodians

Radiodonta

'Bivalved' arthropods

Trilobitomorpha

Eurypterida

Bradoriida

Ostracoda

Branchiopoda

Remipedia

Copepoda

Malacostraca

Swimming with flap-like structures

Swimming with body

Swimming with unspecialized appendages

Swimming with specialized appendages

Compound eye

Bioluminescence

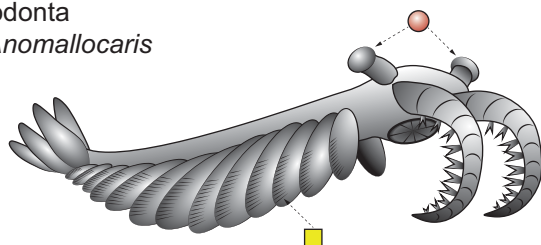
Gills

Brooding of eggs

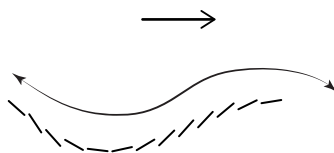
Direction of displacement

Appendages/body movement

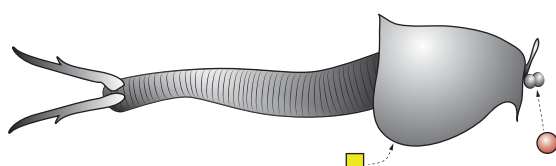
Radiodonta
e.g. *Anomallocaris*



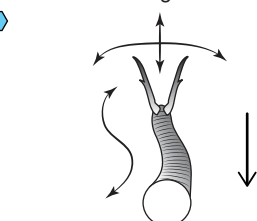
Swimming with flap-like structures



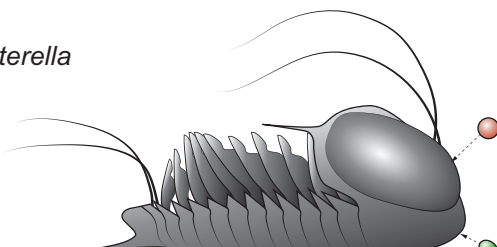
'Bivalved arthropods'
e.g. *Nereocaris*



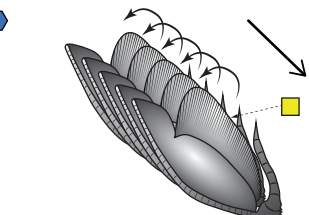
Swimming with body



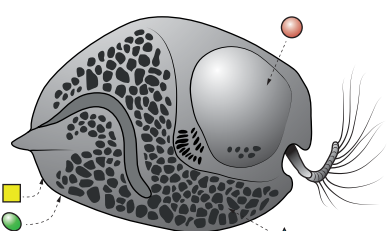
Trilobita
e.g. *Opipeuterella*



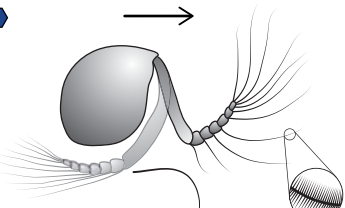
Swimming with unspecialized appendages

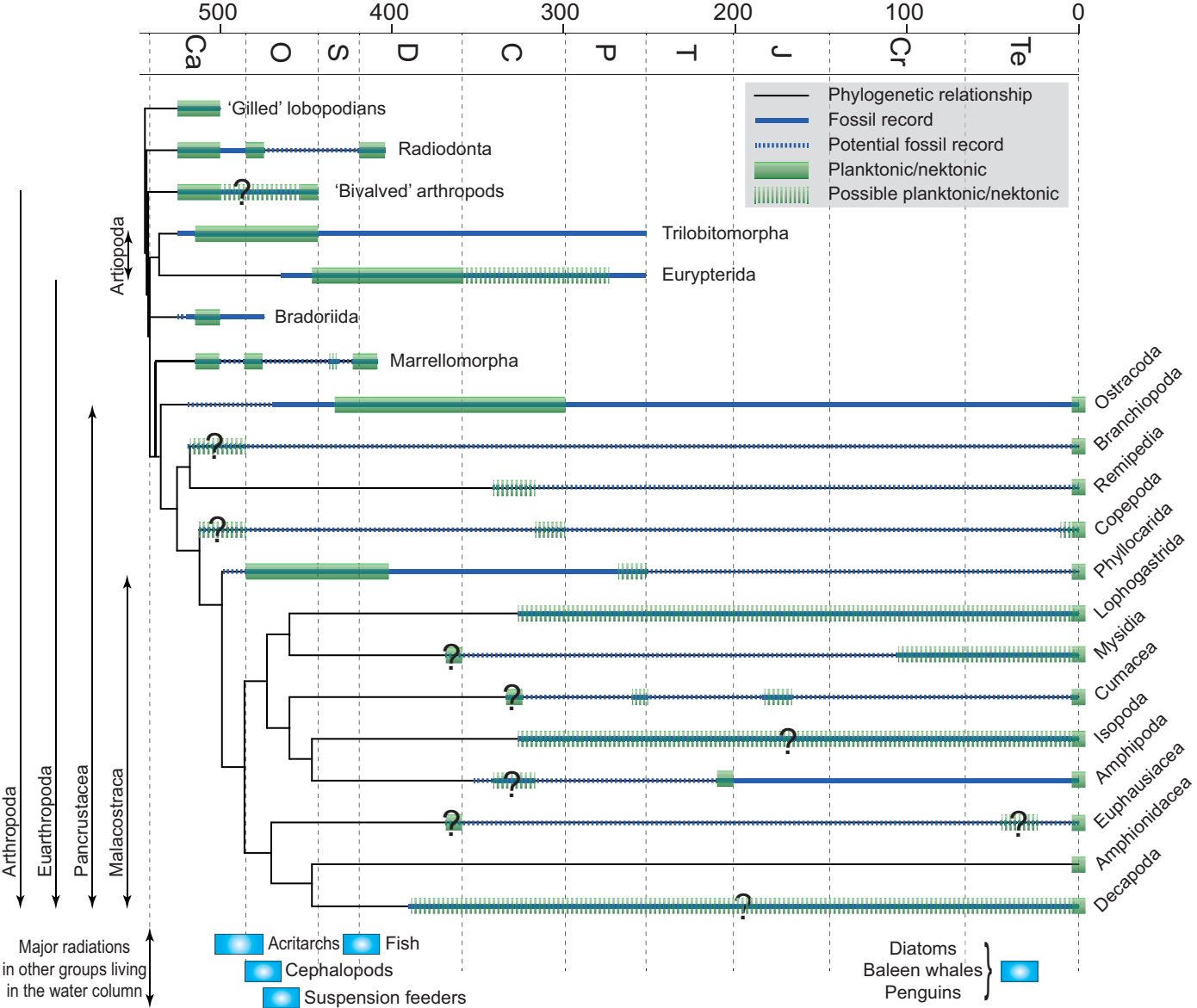


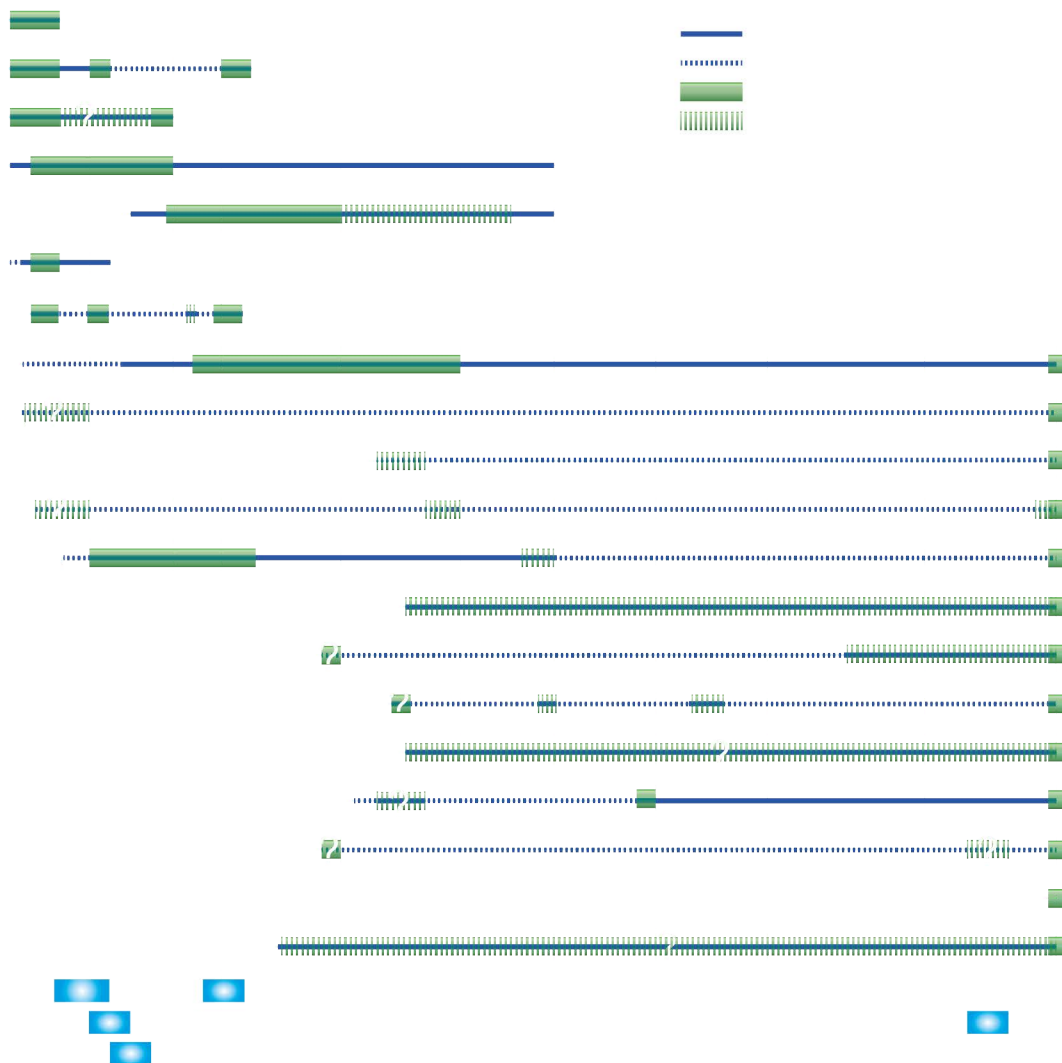
Ostracoda
e.g. *Parabolbozoe*



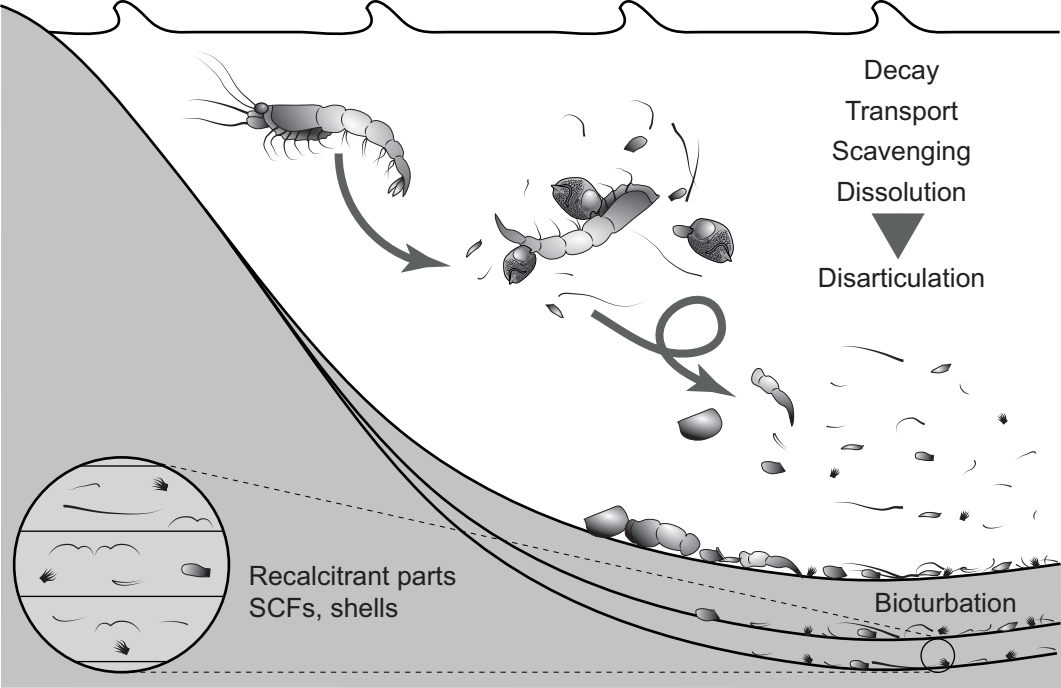
Swimming with specialized appendages











ARTHROPODS IN THE PELAGIC FOOD WEB



Feeding on

RECENT

Tertiary consumers

>200 mm
(top predators)

No
arthropods



Secondary consumers

20-200 mm
(macrozooplankton)

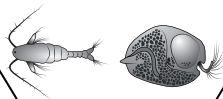
Ostracoda
Malacostraca



Primary consumers

0.2-20 mm
(mesozooplankton)

Copepoda
Remipedia Ostracoda
Malacostraca Branchiopoda



Bradoriida Ostracoda
Copepoda Malacostraca
Trilobitomorpha Branchiopoda



<0.2 mm

(picoplankton, phytoplankton,
microzooplankton)

Eggs

Larval stages



Eggs

Larval stages

EARLY PALAEOZOIC

Radiodonta
Eurypterida
Gilled lobopodians

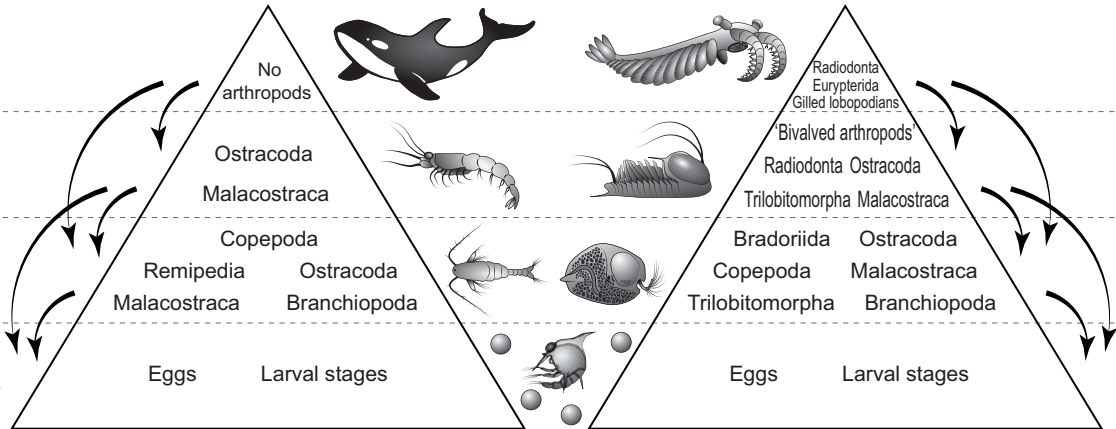
'Bivalved arthropods'
Radiodonta Ostracoda

Trilobitomorpha Malacostraca

Bradoriida Ostracoda
Copepoda Malacostraca
Trilobitomorpha Branchiopoda

Eggs

Larval stages



TAXA IN THE WATER COLUMN		RANGE IN THE WATER COLUMN	LIFESTYLE	ANATOMICAL PREADAPTATIONS	FEEDING HABITS	TROPHIC LEVEL	REPRODUCTIVE STRATEGY		
HIGHER TAXA	EXAMPLES								
Arthropoda	Basal arthropods	'Gilled lobopodians'	<i>Pambdelurion</i> <i>Kerygmachela</i> <i>Opabinia</i>	Cambrian	demersal	efficient eyes ? swimming capabilities, predatorial appendages, efficient respiration ?	predator	tertiary consumer	unknown
		Radiodonta	<i>Anomalocaris</i> <i>Tamisiocaris</i> <i>Schinderhannes</i>	Cambrian to Devonian	demersal pelagic ?	efficient eyes, swimming capabilities, predatorial/filtering appendages, efficient respiration?	predator suspensivore	secondary consumer tertiary consumer	unknown
		'Bivalved arthropods' (excluding Bradoriida and ostracoda)	<i>Nereocaris</i> <i>Erjecaris</i> <i>Isoxys</i> / <i>Tuzoia</i>	Cambrian	demersal pelagic ?	efficient eyes, swimming capabilities, buoyant body? predatorial appendages, efficient respiration?	predator ?	primary consumer secondary consumer tertiary consumer	unknown
	Trilobitomorpha	Agnostida	<i>Ptychagnostus</i>	Cambrian to Ordovician	planktonic	efficient eyes, swimming capabilities, buoyant body, predatorial appendages ? efficient respiration ?	predator suspensivore parasite	primary consumer secondary consumer tertiary consumer	brooding of eggs planktonic larval stage
		Ptychopariida	<i>Ctenopyge</i>	Cambrian	planktonic				
		Corynexochida	<i>Thoracocare</i>	Cambrian	pelagic				
		Redlichiida	<i>Beishanella</i>	Cambrian	pelagic				
		Burlingiidae	<i>Schmalenseieia</i>	Cambrian	planktonic				
		Proetida	<i>Carolinites</i>	Ordovician	pelagic				
		Asaphida	<i>Pricyclopyge</i>	Ordovician	pelagic				
	Eurypterida	<i>Adelophthalmus</i> <i>Pterygotus</i> <i>Acutiramus</i>	Ordovician to Permian	demersal	efficient eyes, swimming capabilities, predatorial appendages	predator	secondary consumer tertiary consumer	unknown	
	Bradoriida	<i>Anabaroichillina</i>	Cambrian	planktonic	efficient? eyes, swimming capabilities, buoyant body, predatorial appendages, efficient respiration?	predator ? suspensivore ?	primary consumer secondary consumer	brooding of eggs ?	
	Ostracoda	Halocyprida	no fossil record	no fossil record	demersal pelagic planktonic	efficient eyes, swimming capabilities, buoyant body, predatorial appendages, efficient respiration	predator suspensivore parasite	primary consumer secondary consumer	brooding of eggs
		Myodocopida	<i>Bolbozoe</i> / <i>Richteria</i>	Silurian to Recent					
	Branchiopoda	known from appendages only	Cambrian ? to Recent	demersal planktonic	efficient eyes, swimming capabilities, buoyant body, predatorial appendages, efficient respiration	predator? suspensivore parasite?	primary consumer secondary consumer	brooding of eggs	
	Remipedia	no fossil record in the water column	no fossil record in the water column	demersal planktonic	swimming capabilities, buoyant body, predatorial appendages?	predator suspensivore parasite	primary consumer secondary consumer	brooding of eggs ? planktonic larval stage	
	Copepoda	known from appendages only	Cambrian ? to Recent	demersal planktonic	eyes, swimming capabilities, buoyant body, predatorial appendages	predator suspensivore parasite	primary consumer secondary consumer	brooding of eggs	
	Pancrustacea	Phyllocarida	<i>Caryocaris</i>	Ordovician to Recent	efficient eyes, swimming capabilities, buoyant body, predatorial appendages, efficient respiration	predator suspensivore parasite	primary consumer secondary consumer tertiary consumer	brooding of eggs planktonic larval stage	
			Amphipoda	<i>Rosagammarus</i> ?					Triassic ? to Recent
		Peracarida	Isopoda	no fossil record in the water column					no fossil record in the water column
			Mysidia	<i>Siriella</i> ?					Jurassic ? to Recent
			Lophogastrida	<i>Schimperella</i> ?					Carb. ? to Recent
			Cumacea	<i>Carbocuma</i> ?					Carb. ? to Recent
			Eucarida	Euphausiacea					no fossil record
		Amphionidacea		no fossil record					no fossil record
		Decapoda		<i>Aciculopoda</i> ?					Devonian ? to Recent