

CHAPTER 14

MYRIAPODA

MYRIAPODS

CENTIPEDES

- ▶ Subphylum Myriapoda
 - ▶ Class Chilopoda
 - ▶ Two tagmata: head and trunk
 - ▶ tracheae with spiracles
 - ▶ Maxillipeds





MYRIAPODS

MILLIPEDES

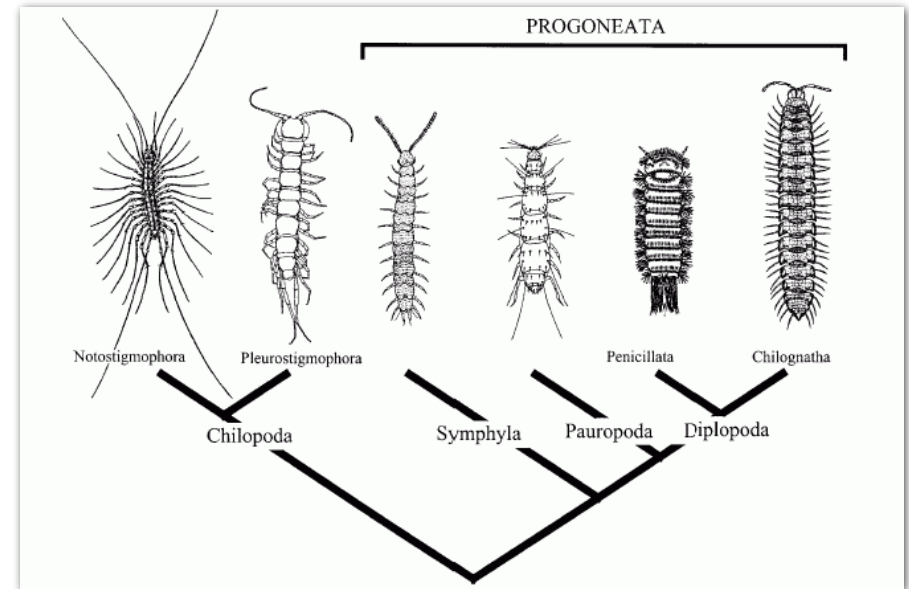
- ▶ Class Diplopoda –
 - ▶ Two tagmata: head (with ocelli) and trunk
 - ▶ tracheae
 - ▶ Detritivores or herbivores
 - ▶ some defensively toxic



MYRIAPODS

OTHER MYRIAPODS

- ▶ Classes Pauropoda and Symphyla–
 - ▶ Centipede-like in appearance
 - ▶ limbs on each segment
 - ▶ soft-bodied

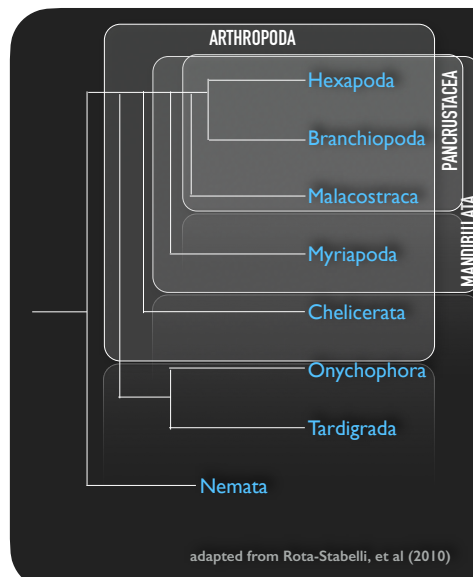


phylogeny of myriapoda
from Edgecombe, G. D. and Giribet, G., 2002

MANDIBULATA?

CURRENT PHYLOGENETIC IDEAS

- ▶ Clade Mandibulata (subphylum?)
 - ▶ Myriapoda
 - ▶ Pancrustacea
 - ▶ Hexapods?
 - ▶ Regier, et al (2010)
 - ▶ long branch attraction?
 - ▶ long branches may show erroneous affinities
 - ▶ may increase likelihood of convergences

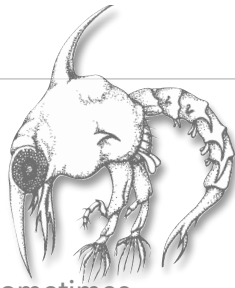


CHAPTER 14, PART 3

CRUSTACEA

PANCRUSTACEA

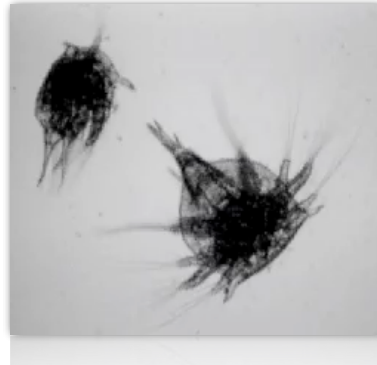
- ▶ Subphylum Pancrustacea (crustacea)–
 - ▶ aquatic, terrestrial, many are planktonic
 - ▶ usually dioecious, sometimes monoecious, sometimes parthenogenic



▶ **nauplius**

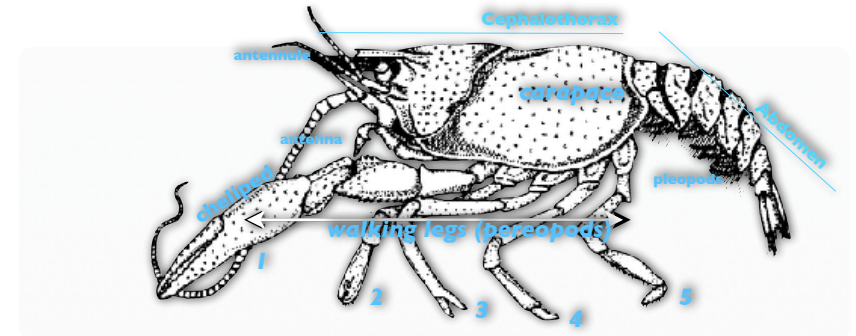
- ▶ three pairs appendages,
 - ▶ first antennae
 - ▶ second antennae
 - ▶ mandibles
- ▶ medial eye

▶ **zoea**

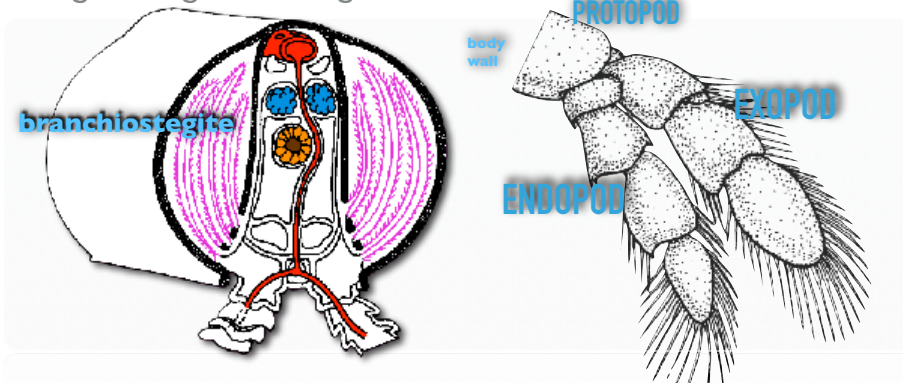


▶ Anatomy

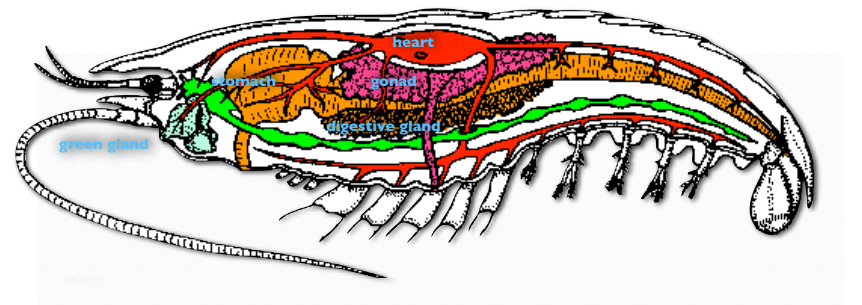
- ▶ Three tagmata: head, thorax, abdomen
- ▶ Heavily calcified exoskeleton
- ▶ carapace
- ▶ Two pairs of antennae



- ▶ Ancestrally biramous appendages
 - ▶ Basal protopod
 - ▶ lateral exopod
 - ▶ medial endopod branches
 - ▶ epipod
 - ▶ gills for gas exchange

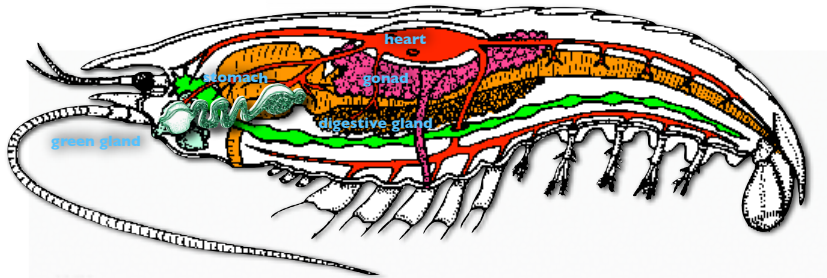


- ▶ open circulatory system like all arthropods
 - ▶ hemolymph
 - ▶ hemocyanin or hemoglobin
 - ▶ arteries, hemocoels, venus sinuses, ostia, heart
 - ▶ coelom greatly reduced



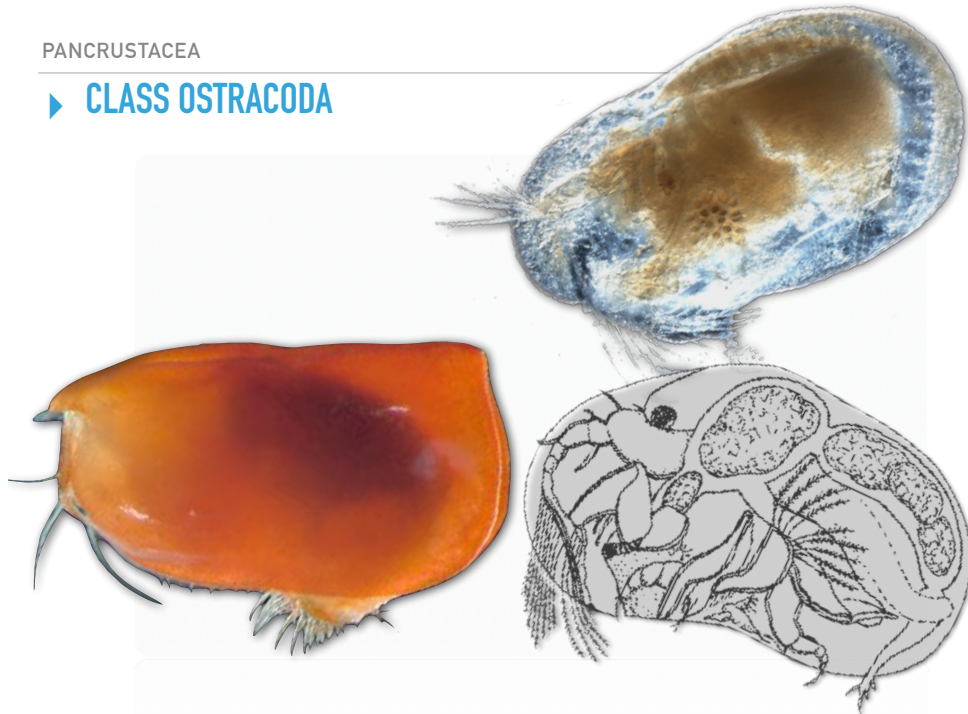
CRUSTACEANS

- ▶ digestion
 - ▶ cardiac stomach, pyloric stomach
- ▶ excretion
 - ▶ gills
 - ▶ green gland



PANCRUSTACEA

▶ CLASS OSTRACODA



PANCRUSTACEA

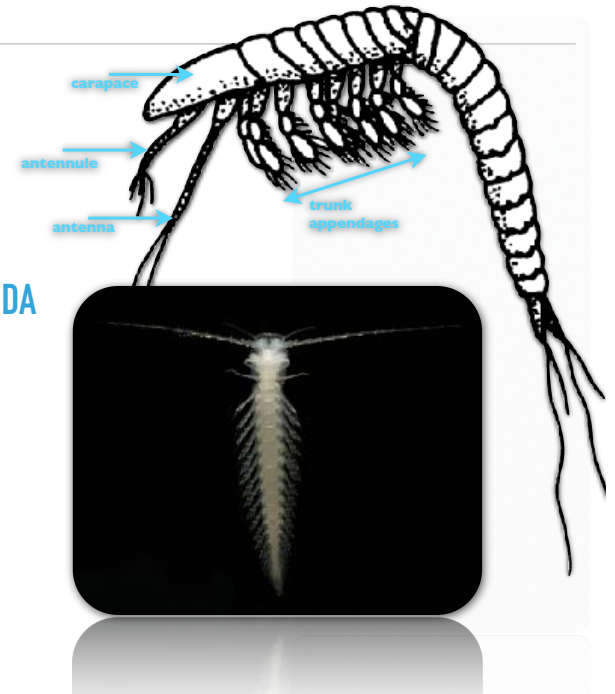
TAXONOMY

▶ CLASS REMIPEDIA

- ▶ many ancestral features

▶ CLASS CEPHALOCARIDA

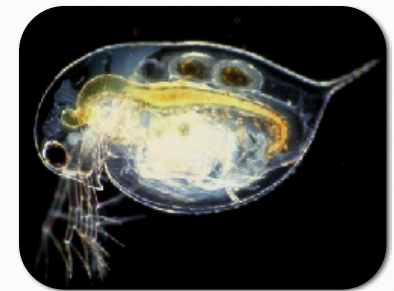
- ▶ also lots of plesiomorphies
- ▶ monoecious



PANCRUSTACEA

▶ CLASS BRANCHIOPODA

- ▶ phyllopodia
- ▶ Mostly freshwater forms
- ▶ Order Cladocera [Diplostraca]



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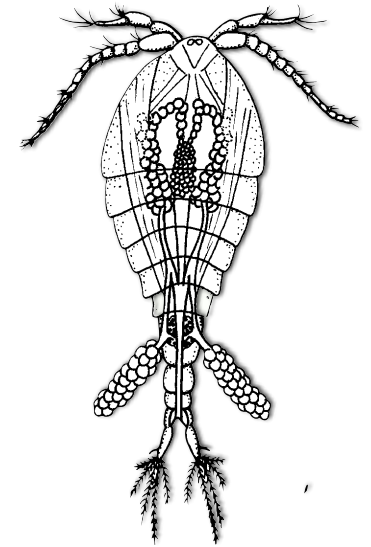
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PANCRUSTACEA

- ▶ CLASS COPEPODA
- ▶ Very abundant



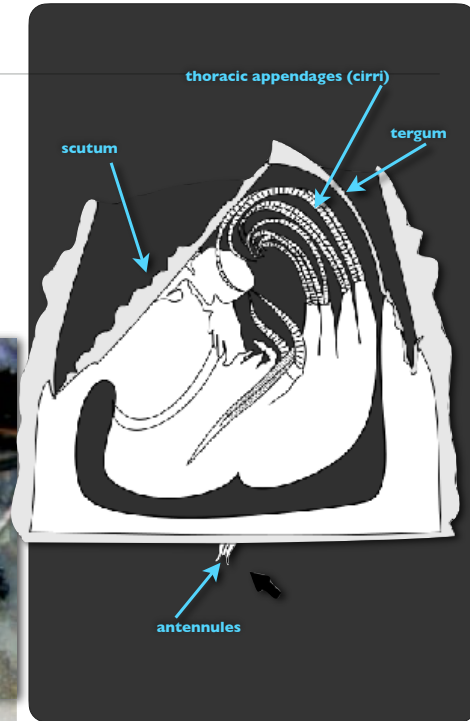
PANCRUSTACEA

- ▶ CLASS PENTASTOMIDA
- ▶ formerly placed in a separate phylum



PANCRUSTACEA

- ▶ CLASS CIRRIPEDIA
- ▶ no chitinous exoskeleton;
- ▶ calcareous plates
- ▶ Filter feed with cirri



PANCRUSTACEA

▶ CLASS MALACOSTRACA

- ▶ most of the large crustaceans



PANCRUSTACEA

- ▶ limbs
 - ▶ 8-head(feeding/sensory), 5-thorax(v... abdomen(swim/respire/reprod.)
 - ▶ gills
 - ▶ branchiostegite "shield"



PANCRUSTACEA

- ▶ Pillbugs -- "rollypoly"
- ▶ pseudotracheae



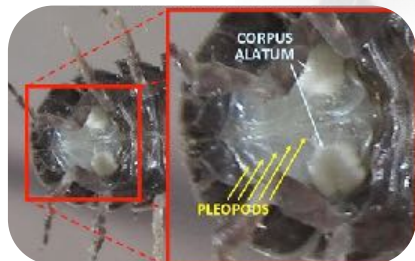
PILLBUG



SOWBUG



GIANT MARINE ISOPOD



PANCRUSTACEA

PHYLOGENY

- ▶ Crustacean phylogeny
 - ▶ Lots of disagreement/questions

- Presented hypothesis - consensus and conflicts

