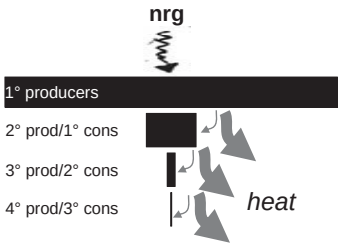
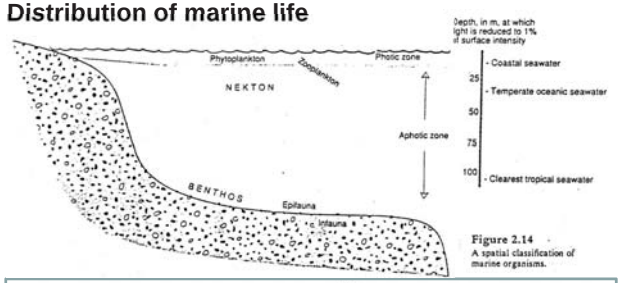
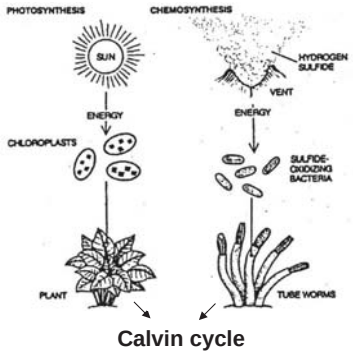
Invertebrate communities



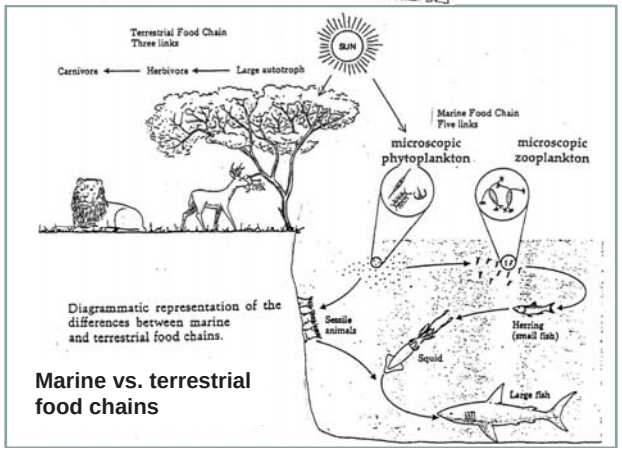
Distribution of marine life



Sources of nrg input



Calvin cycle

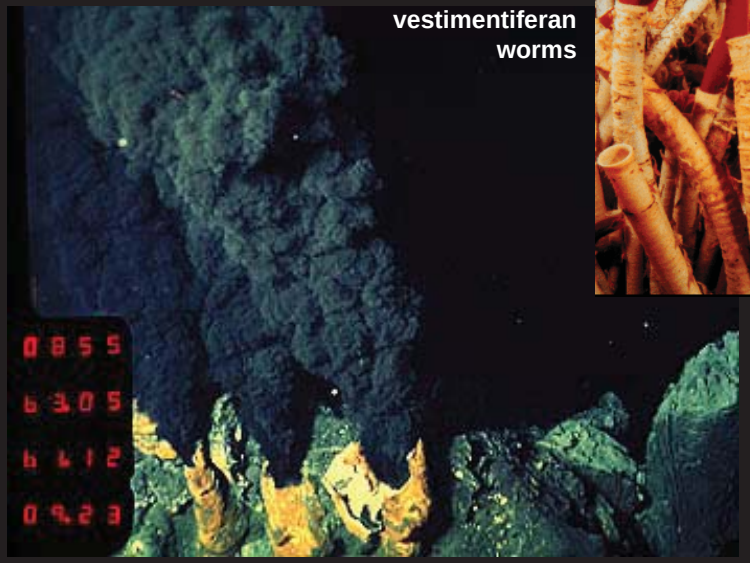


Marine vs. terrestrial food chains

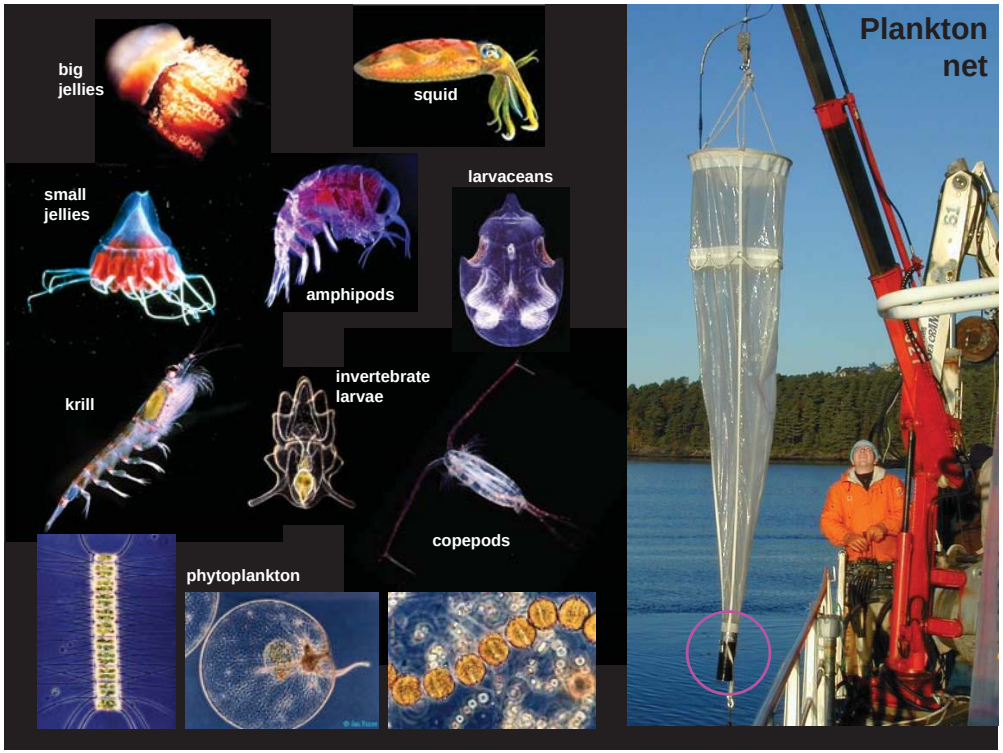
Variation in depth of the photic zone

Ph. Annelida, Cl. Polychaeta

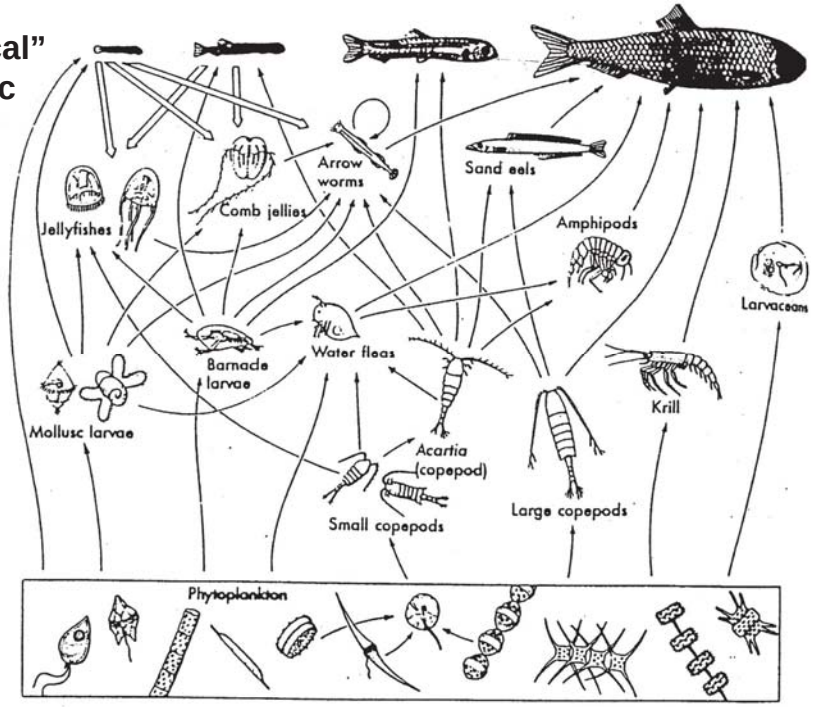
F. Siboglinidae



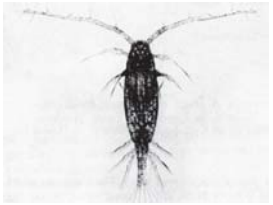
vestimentiferan worms



"Typical" pelagic food web

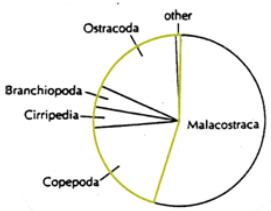


1° producers

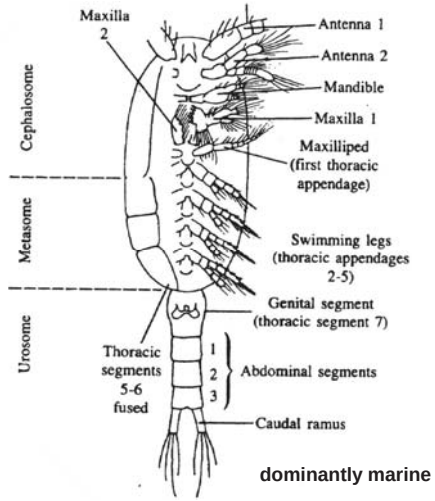


Subcl. Copepoda

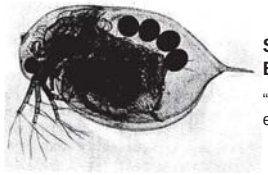
e.g. *Calanus*



Ph. Arthropoda
Subph. Crustacea
Cl. Maxillopoda

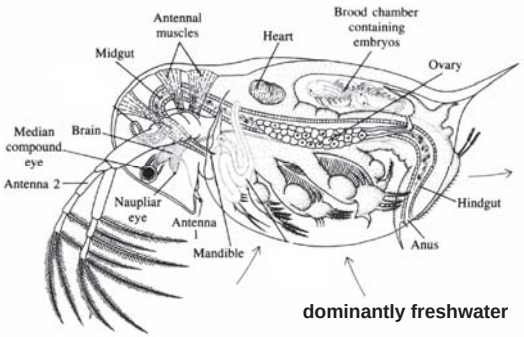


dominantly marine



Subcl. Branchiopoda

"water fleas"
e.g. *Daphnia*

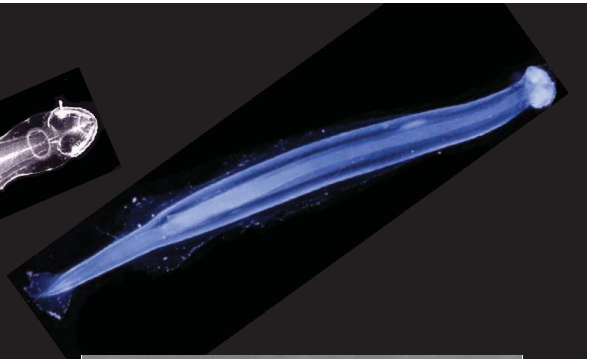


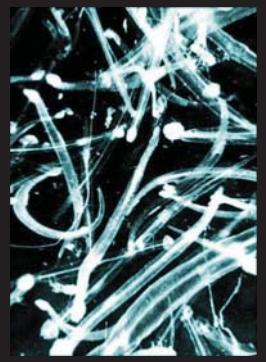
dominantly freshwater

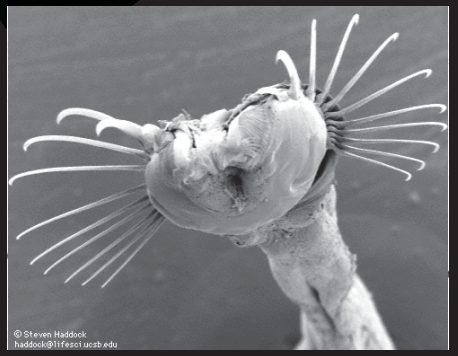
and introducing...

Ph. Chaetognatha

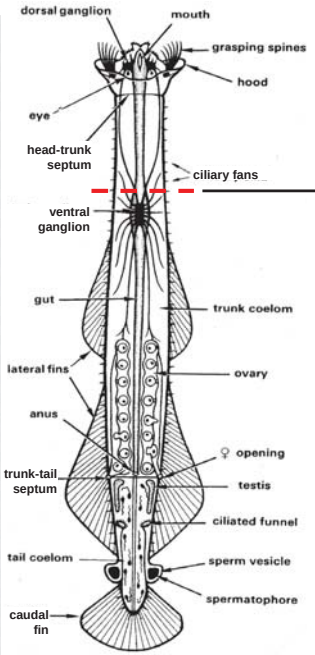
another "holoplanktonic" phylum

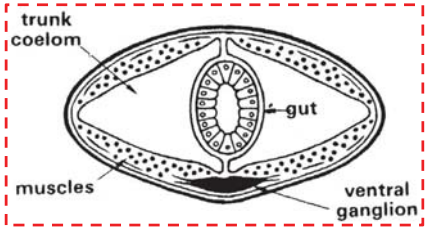




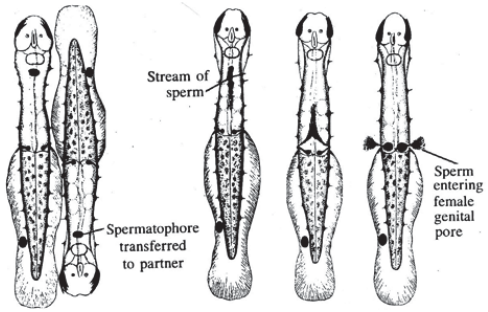


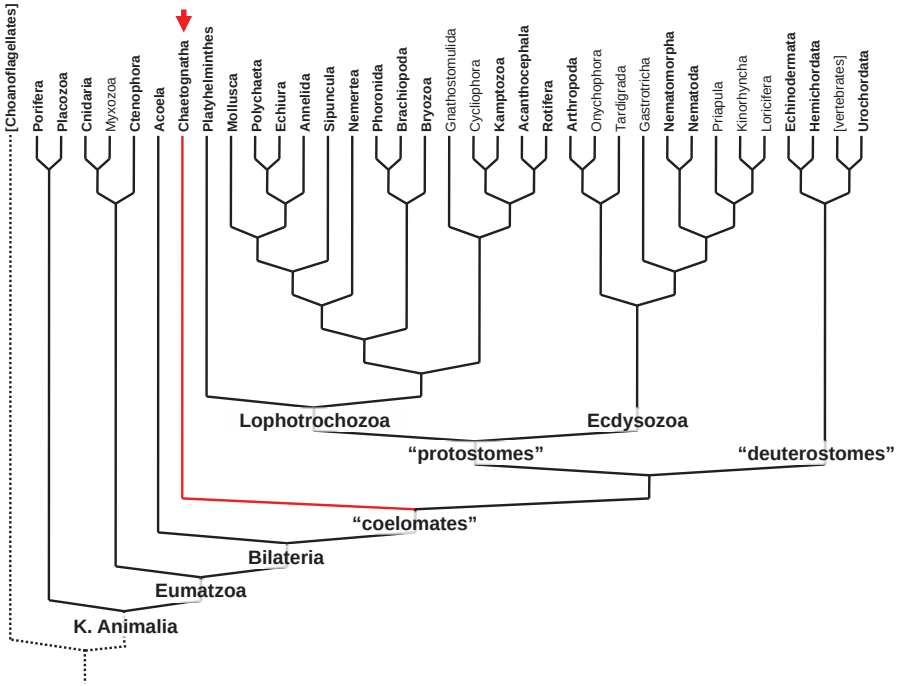
Ph. Chaetognatha



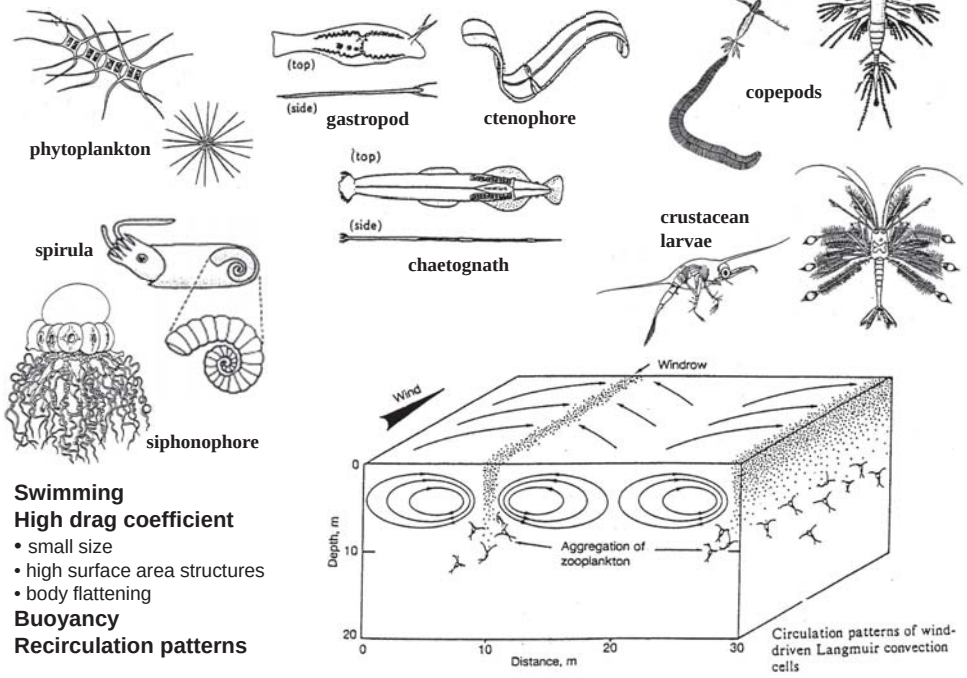


reciprocal sperm transfer in benthic *Spadella*





Sinking: a major challenge to planktonic communities

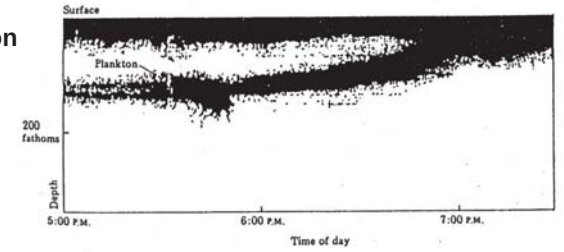


Swimming
High drag coefficient
- small size
- high surface area structures
- body flattening

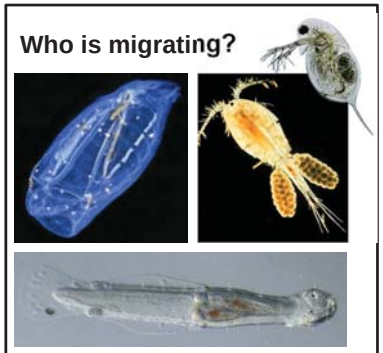
Buoyancy
Recirculation patterns

Patterns of diel vertical migration

Figure 2.26 Sonogram record of movement of vertical migrating plankton.



Who is migrating?



→ 15-50% of zooplankton biomass

Why? Stich & Lampert (1981): costs and benefits of different migration strategies of two copepod species

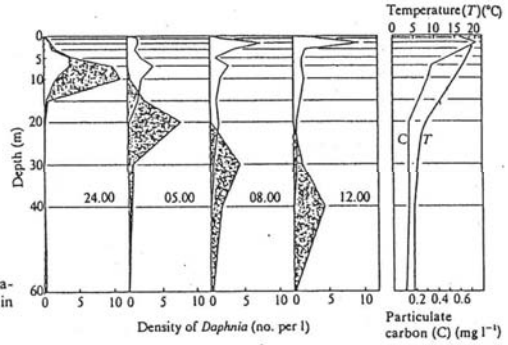
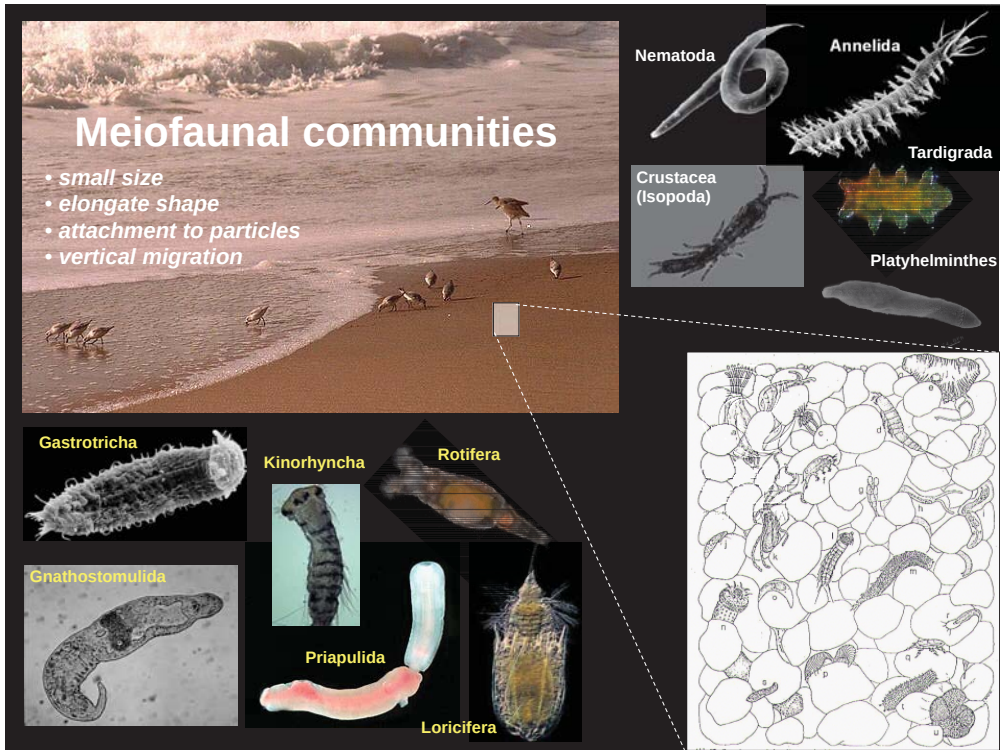
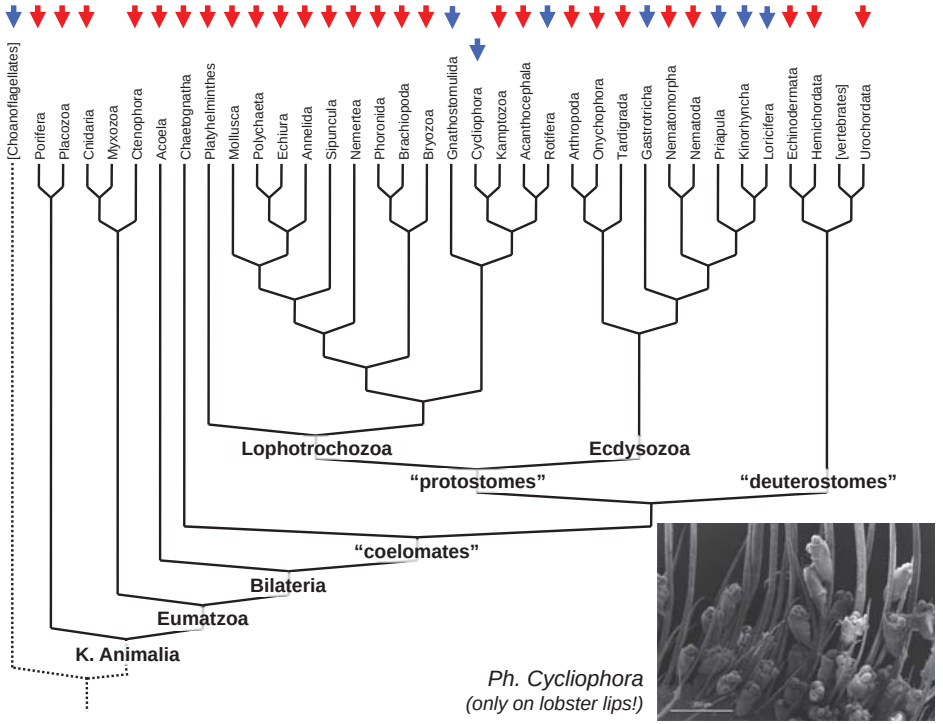
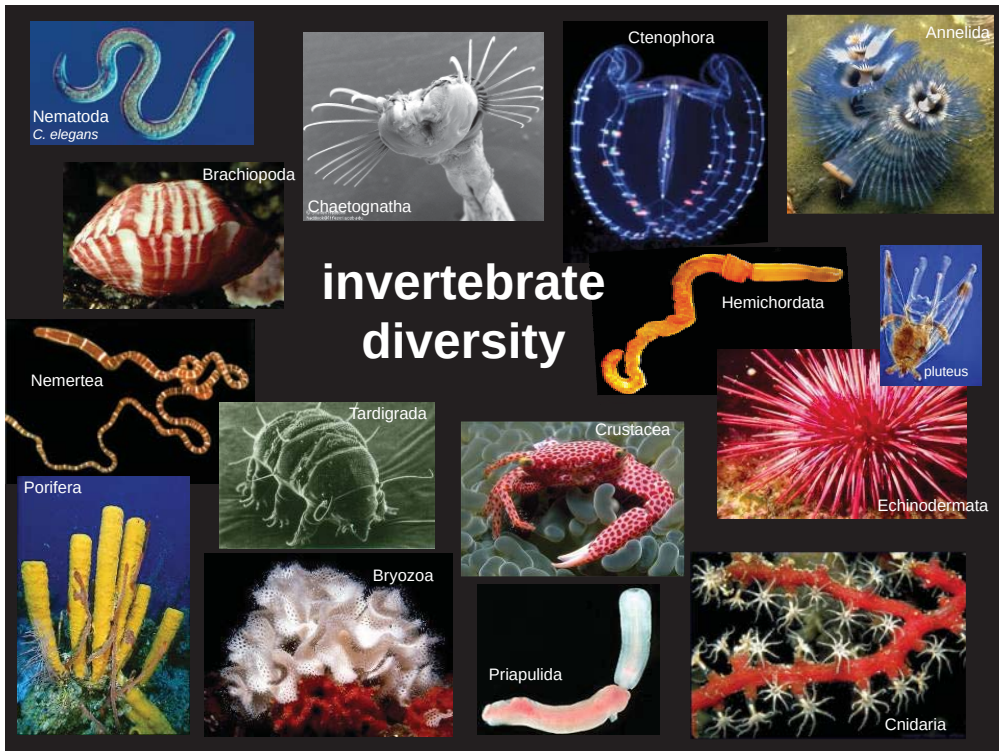


Fig. 1 Typical examples of the different diurnal vertical migrations of *D. galeata* (open area) and *D. hyalina* (shaded area) in Lake Constance, July 1977.


Meiofaunal communities
• small size
• elongate shape
• attachment to particles
• vertical migration
Nematoda
Annelida
Tardigrada
Crustacea (Isopoda)
Platyhelminthes
Gastrotricha
Kinorhyncha
Rotifera
Gnathostomulida
Priapulida
Loricifera


[Choanoflagellates]
Porifera
Placozoa
Cnidaria
Myxozoa
Ctenophora
Acoela
Chaetognatha
Platyhelminthes
Mollusca
Polychaeta
Echiura
Annelida
Sipuncula
Nemertea
Phoronida
Brachiopoda
Bryozoa
Gnathostomulida
Cyclophora
Kamptozoa
Acanthocephala
Rotifera
Arthropoda
Onychophora
Tardigrada
Gastrotricha
Nematomorpha
Nematoda
Priapula
Kinorhyncha
Loricifera
Echinodermata
Hemichordata
[vertebrates]
Urochordata
Lophotrochozoa
Ecdysozoa
"protostomes"
"deuterostomes"
"coelomates"
Bilateria
Eumatzoa
K. Animalia
Ph. Cycliophora
(only on lobster lips!)


invertebrate diversity
Nematoda
C. elegans
Brachiopoda
Chaetognatha
Ctenophora
Annelida
Hemichordata
pluteus
Nemertea
Tardigrada
Crustacea
Echinodermata
Porifera
Bryozoa
Priapulida
Cnidaria