

21. Invertebrate Communities--Plankton and Meiofauna

"The role of the infinitely small in nature is infinitely great."--Louis Pasteur

COMMUNITIES AND NEW TAXA	Photic and aphotic zones
Pelagos: plankton and nekton	Primary and secondary production
Ph. Chaetognatha	Energy loss in food chains
Ph. Arthropoda	Terrestrial vs. marine food chains
Cl. Maxillopoda, SubCl. Copepoda	Photosynthesis and chemosynthesis
Cl. Maxillopoda, SubCl. Branchiopoda	Energy input to the pelagos and benthos
Benthos: meiofauna	Common taxa of a pelagic food web
Ph. Gastrotricha, Priapulida, Loricifera, &	Challenges of planktonic life
Kinorhyncha	Diel vertical migration
MAJOR THEMES	Challenges of meiofaunal life
Phytoplankton and zooplankton	

OUTLINE

Recap: Alternative physical realities: life at high and low Reynolds numbers

- 1) Classifying the distribution of life in marine habitats
- 2) The input and transfer of energy in planktonic and terrestrial food chains
- 3) Major players in pelagic communities, and challenges to planktonic life
- 4) In what ways are pelagic and benthic communities "connected"?
- 5) Meiofauna: a diverse collection of phyla with convergent body features

GOALS

After studying from lecture notes and the associated reading, you should be able to:

- Describe major regions of the ocean with reference to organisms found in them
- Define the terms "plankton" and "nekton," and why they are both found in pelagic habitats
- Explain the significance of the photic and aphotic zones in marine communities
- Contrast the general structures of food chains in terrestrial and marine habitats
- Contrast pathways by which energy enters different invertebrate communities
- Describe the major organisms that contribute to planktonic food webs
- Compare and contrast major challenges and adaptations to life in the plankton and meiofauna
- Explain typical patterns of vertical migration in planktonic species, and tradeoffs involving food, predation, reproduction, UV exposure, and growth that govern these dynamic patterns
- Describe aspects of convergent body design among species that occupy meiofaunal habitats

REFERENCES

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