

Malacology. MS668. 3 credits, 24 lectures and one field trip in 3 sections. Lectures 1-20 by Roger Mann. Lectures 21-24 by Dr Michael Vecchione, Systematic Laboratory, National Museum, Smithsonian Institution.

Section 1. Origin and evolution of the molluscs

- Lecture 1. General Introduction to the molluscs.
- Lecture 2. Functional morphology of the primitive mollusc. Review of the phylogenetic key and evolution of the molluscs.

Section 2. General biology of molluscs

- Lecture 3 - 5: Shell structure and formation, foot, general musculature and locomotion, mantle cavity, radula and alimentary canal, circulation and body cavity, nervous system and musculature, reproduction and larval development.

Section 3. Phylogeny, ecology, development, and physiology of major taxonomic groups.

- Lecture 6. The primitive molluscs. Monoplacophora (Gastropods) and (former) Aplousobranchia [Aplousobranchia now subdivided into Neomeniomorpha (= Solenogastres = Solenogasters) and Caudofoveata (= Chaetodermomorpha)].
- Lecture 7. Polyplacophora (Chitons)
- Lecture 8. Gastropoda: Evolution, general taxonomy and morphology and shell forms. Torsion.
- Lecture 9. Gastropoda: part 1 (formerly the Mesogastropods).
- Lecture 10. Gastropoda: part 2 (formerly the Neogastropods).
- Lecture 11. Gastropoda: part 3 (formerly the Opisthobranchs).
- Lecture 12. Bivalvia: Evolution, general taxonomy and morphology, shell forms, siphons, and the infaunal form.
- Lecture 13. Bivalvia: The gill as a feeding and respiratory exchange surface, physiological ecology,
- Lecture 14. Bivalvia: Reproductive periodicity, energetics, storage and gametogenic cycles.
- Lecture 15. Bivalvia: Larval development, the simple veliger form, larval brooding and placental nutrition, larval physiology.
- Lecture 16. Larval ecology and early life history of Gastropoda and Bivalvia: arrested development in larval forms of gastropods (teleplanic larvae), larval behavior.
- Lecture 17: Wood, peat and rock boring forms.
- Lecture 18. Settlement and early life history of bivalves and gastropods: hydrodynamic and chemical considerations in the development and settlement processes of larvae. Post metamorphic drifting
- Lecture 19. Symbiosis and atypical nutrition. Symbiosis in bivalves: with zooxanthellae, with nitrogen fixing/cellulase producers, with sulfur oxidizers (gutless forms),
- Lecture 20. Parasitic forms and carnivory in deep sea septibranchs. Scaphopoda: Shell forms, distribution, ecology

- Lecture 21 -23. Cephalopoda: Anatomy, morphology, taxonomy, distribution, development, including the concept of the paralarva.
- Lecture 24. Heteropods and Pteropods.
- Field Trip: The Smithsonian mollusc collection, Washington, D.C.