

PHYLUM ANNELIDA (Ch. 22)

1. INTRODUCTION

segmented worms - 9k species, size mm to 2 m

- closed circulatory system
 - blood confined to heart & vessels
- metamerism - true segmentation
 - repetitive arrangement of structures
 - segments partitioned by septum

evolution - originally adapted for burrowing

- prevents forcing internal fluids rearward
- controls fluid pressure within each segment
- (also found in arthropods & chordates)

2. CLASSES

1. earthworms - freshwater & land

- 4 pairs setae (bristles) per segment
- clitellum (collar for reproduction)

2. leeches - freshwater & land

- exoparasite on blood or scavenger
- clitellum, 1 pair suckers, no setae
- 34 segments (each 1-5 external annuli)

3. polychaetes - marine, majority of species, 2 forms

- many long setae, no clitellum
 - free-living - omnivore, parapodia
 - tubeworms - sessile & tentacles

3. NUTRITION

earthworms - scavenge & enrich soil

leeches - 3 jaws to penetrate skin

- anticoagulant & analgesic in saliva

polychaetes - jaws or tentacles (filter-feeding)

4. LOCOMOTION

setae - chitinous bristles for traction

- short in earthworm, long in polychaete

suckers - pair in leeches (like fluke)

parapodia - crawl/swim in polychaetes

sessile - burrow or tube in tubeworms

5. REPRODUCTION

earthworms - monecious (paired testes plus ovary)

- mutual pseudocopulation (into pores)
- external fert. (within cocoon secreted by clitellum)

leeches - monecious, internal fertilization

polychaetes - dioecious (seasonal)

- epitoke (last segment detaches to reproduce)
- external fertilization (epitokes swarm)

regeneration - earthworms replace lost segments

- epitokes develop remaining segments

6. OTHER SYSTEMS

circulation - closed system (5 hearts)

skeleton - hydrostatic (coelom in each segment)

- tube (calcium or sand in tubeworms)

respiration - cuticle (diffusion)

- gills (in parapodia or tentacles)

nervous - ventral nerve cord

excretion - nephridium (each segment)