

Deuterostomes

Protostomes

Cleavage:

Radial

Spiral

Indeterminate

Determinate

Blastopore:

Anus

Mouth

Mesoderm:

Enterocoelous

Schizocoelous

PHYLA INTERMEDIATE BETWEEN
PROTOSTOMES AND DEUTEROSTOMES

PHYLUM BRYOZOA (5,000 spp.)

PHYLUM PHORONIDA (20 spp.)

PHYLUM BRACHIOPODA (335 spp.)

Most are enterocoelous, radial cleavage

Blastopore becomes the anus

What they have in common:

1. Lophophore structure - respiration & filter feeding
"U" shaped, bears ciliated tentacles
2. Sessile
3. Reduced head (GI tract "U" shaped)
4. CaCO₃ & chitin exoskeleton
5. Filter feeders
6. Hermaphrodites (monoecious), except for brachiopods

Phylum BRYOZOA

Ancient group (600 million years old - L. Cambrium)

Marine & Freshwater forms

Usually colonial (each animal 0.5 mm)

No circulatory system

No respiratory system

No excretory system

Minimal nervous system

Phylum PHORONIDA

All marine and worm-like

Chitinous tube dwellers

Closed circulatory system (contractile vessels)

External fertilization

Free swimming larvae

Phylum BRACHIOPODA

30,000 spp in Paleozoic, few now (deep water, marine)

Two calcareous/chitin shells (dorsal/ventral)

Flexible pedicle

Open circulatory system

Dioecious / external fertilization

Free swimming larvae