

PHYLUM	COMMON NAMES, DESCRIPTION	SPECIES
Ph. Placozoa	<i>Trichoplax</i> , discovered on aquarium walls	1
Ph. Porifera	Sponges	10,000
Ph. Cnidaria	sea anemones, jellyfish, corals etc.	9,500
Ph. Ctenophora	comb jellies	90
Ph. Platyhelminthes	flatworms	25,000
Ph. Mesozoa	mesozoans	50
Ph. Nemertea	ribbon worms	900
Ph. Gnathostomulida	tiny worms, interstitial in marine sand	80
Ph. Gastrotricha	"hairy-bellies," meiofaunal worms	400
Ph. Rotifera	rotifers, microscopic primarily freshwater	2,000
Ph. Nematoda	nematodes, worm shaped	80,000
Ph. Nematomorpha	horsehair worms	240
Ph. Kinorhyncha	spiny-crown worms, marine meiofauna	100
Ph. Loricifera	brush heads, marine meiofauna	10
Ph. Acanthocephala	spiny-headed worms, parasites	1,000
Ph. Cycliophora	cycliophorans	1
Ph. Kamptozoa	entoprocts	150
Ph. Bryozoa	moss animals, ectoprocts	5,000
Ph. Phoronida	phoronids, worm-shaped	10
Ph. Brachiopoda	lamp shells	335
Ph. Mollusca	chitons, snails, clams, squid etc.	110,000
Ph. Priapulida	phallus worms	16
Ph. Sipuncula	peanut worms	320
Ph. Echiura	spoon worms	140
Ph. Annelida	polychaetes, earthworms, echiurans	15,000
Ph. Tardigrada	water bears, interstitial	700
Ph. Onychophora	velvet worms, terrestrial	80
Ph. Arthropoda		
Subph. Chelicerata	spiders, scorpions, horseshoe crabs, etc.	65,000
Subph. Crustacea	crabs, shrimp, barnacles, copepods, etc.	32,000
Subph. Tracheata	insects, centipedes, millipedes	860,000
Ph. Echinodermata	sea stars, brittlestars, sea urchins, etc.	6,000
Ph. Chaetognatha	arrow worms	110
Ph. Hemichordata	acorn worms	90
Ph. Chordata		
Subph. Urochordata	tunicates	3,000
Subph. Cephalochordata	amphioxus	23
Subph. Vertebrata	fish, amphibians, reptiles, birds, mammals	45,000

## CLASSIFICATION OF DIVERSITY: taxon size

□ ≥ 10,000 species

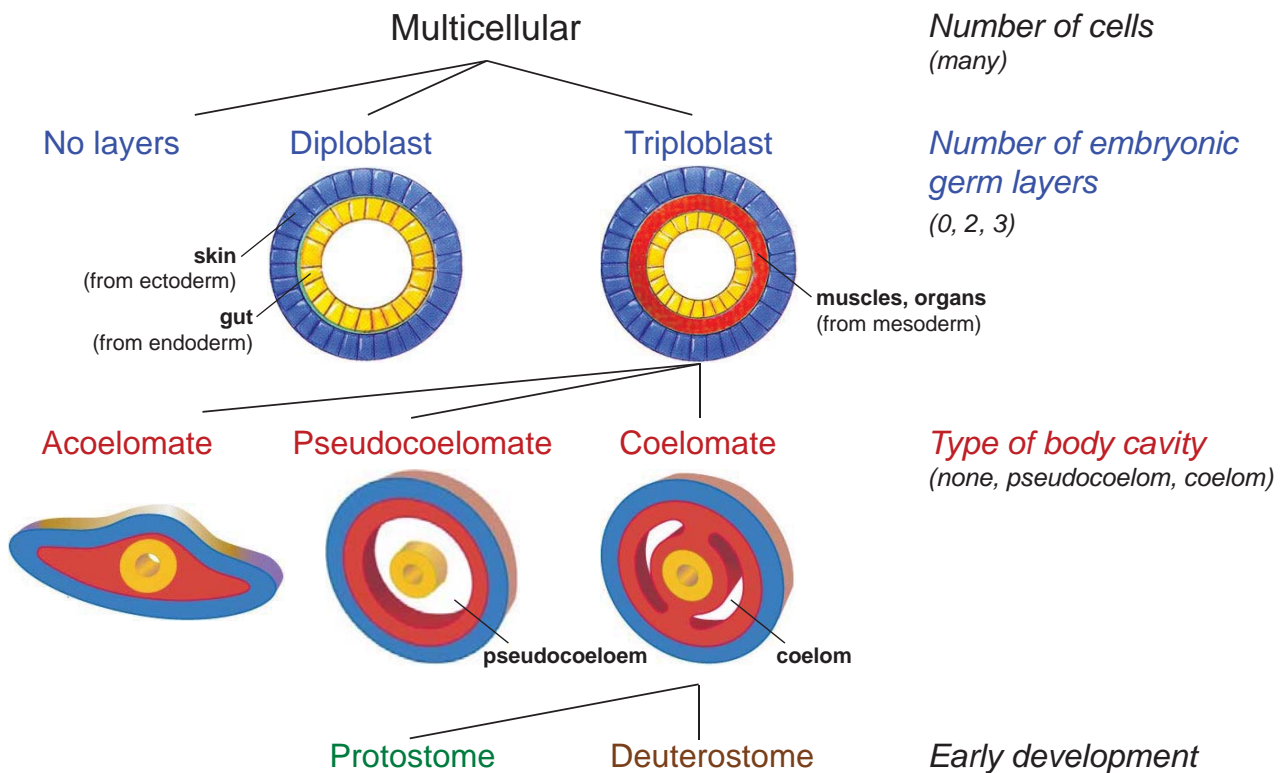
○ ≤ 100 species

○ "worm"

#2!

> 1,200,000 "Invertebrate" species  
45,000 Vertebrate species

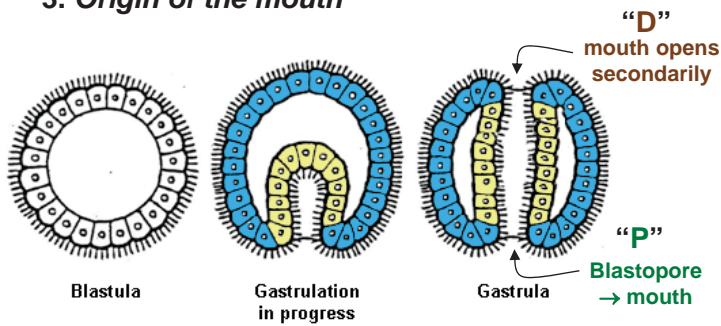
## CLASSIFICATION OF DIVERSITY: taxonomy using traditional features



# Early development: six features that go together

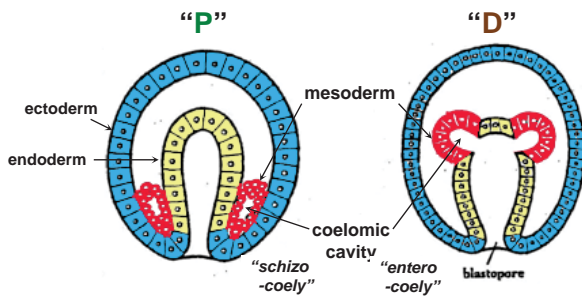
## protostomes vs. deuterostomes

### 3. Origin of the mouth



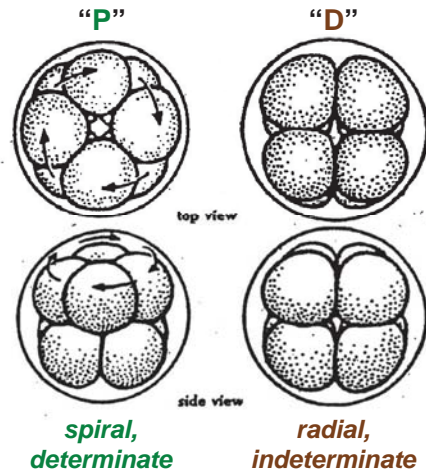
### 4. Origin of mesoderm

### 5. Formation of coelom

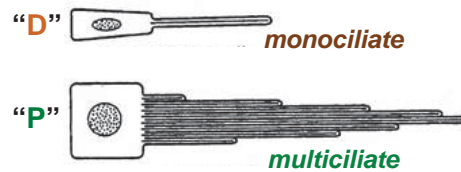


### 1. Pattern of early cell cleavage

### 2. Fate of early cleaved cells



### 6. Cilia per cell



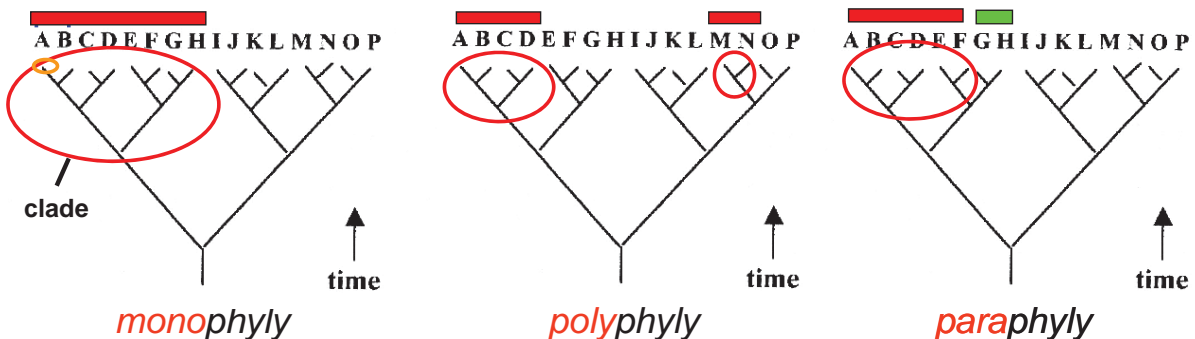
## CLASSIFICATION should reflect degree of RELATEDNESS (taxonomy) (phylogeny)

### TAXONOMY...

Kingdom	Animalia
Phylum	Echinodermata
Class	Asteroidea
Order	Forcipulatida
Family	Asteriidae
Genus	Pisaster
Species	<i>Pisaster ochraceus</i>



### ...PHYLOGENY





# K. Animalia = "Metazoa"

