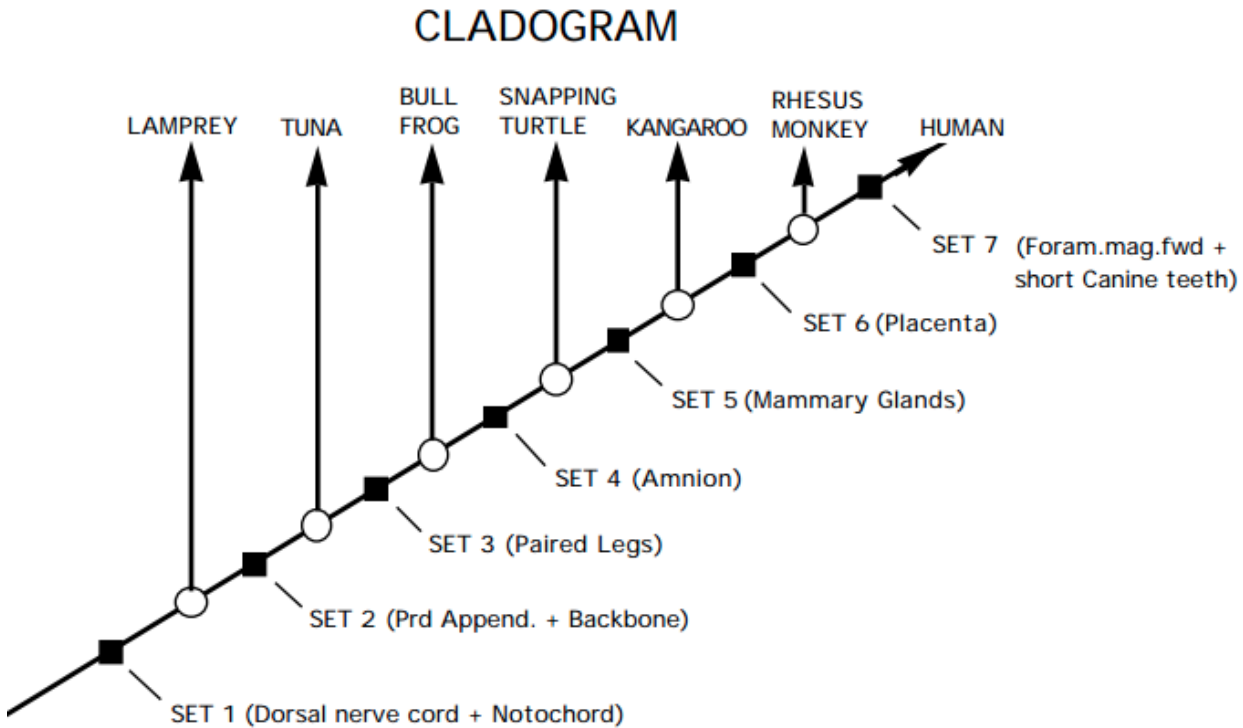


Simple Cladograms:

Data:

		Animals						
SETS	TRAITS	Kangaroo	Lamprey	Rhesus Monkey	Bullfrog	Human	Snapping Turtle	Tuna
SET 1	Dorsal Nerve Cord Notochord	X	X	X	X	X	X	X
SET 2	Paired Appendages Vertebral column	X		X	X	X	X	X
SET 3	Paired legs	X		X	X	X	X	
SET 4	Amnion (Amniotic sac)	X		X		X	X	
SET 5	Mammary Glands	X		X		X		
SET 6	Placenta			X		X		
SET 7	Canine teeth short Foramen magnum fwd					X		
	TOTALS of Xs----->	5	1	6	3	7	4	2

Cladogram from data above:



Another set of data:

Group	Derived Traits				
	hair	lungs	bony shell	grasping hands	jaws
lamprey	-	-	-	-	-
turtle	-	+	+	-	+
gorilla	+	+	-	+	+
lungfish	-	+	-	-	+
pike	-	-	-	-	+
wolf	+	+	-	-	+
human	+	+	-	+	+

- indicates absence of the trait    + indicates the presence of the trait

Another set of data:

Organism	Derived Characteristic				
	Multicellular	Backbone	Legs	Feathers	Hair
Amoeba	Absent	Absent	Absent	Absent	Absent
Slug	Present	Absent	Absent	Absent	Absent
Owl	Present	Present	Present	Present	Absent
Human	Present	Present	Present	Present	Present
Snake	Present	Present	Absent	Absent	Absent

Just a small cladogram from a larger cladogram

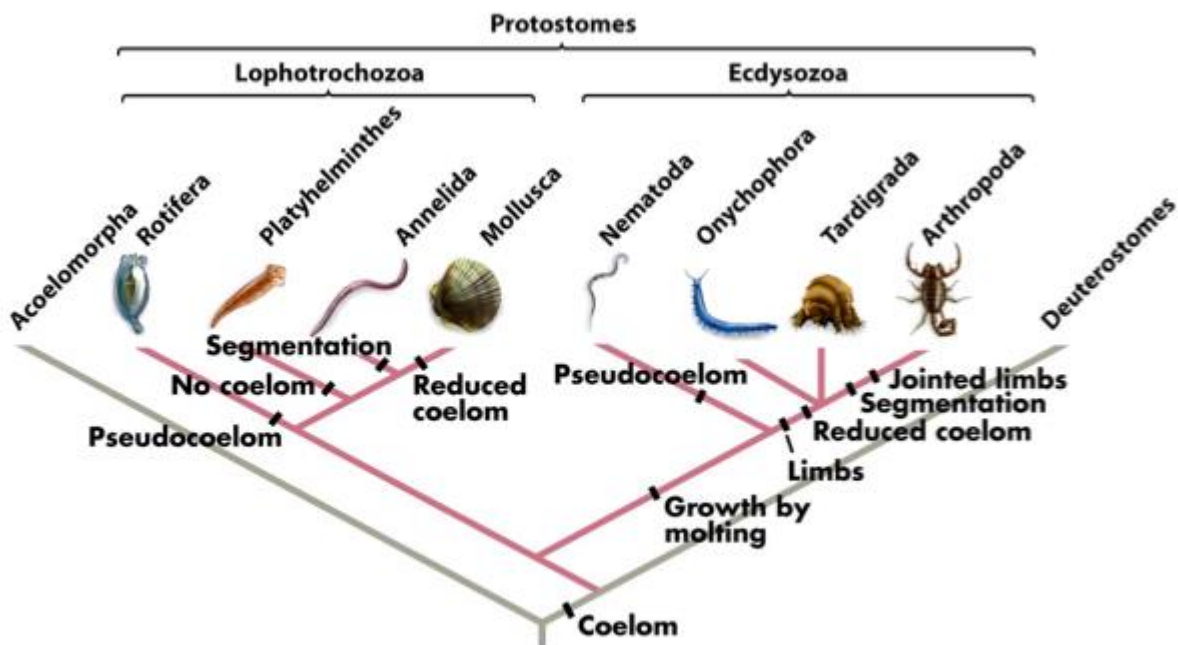
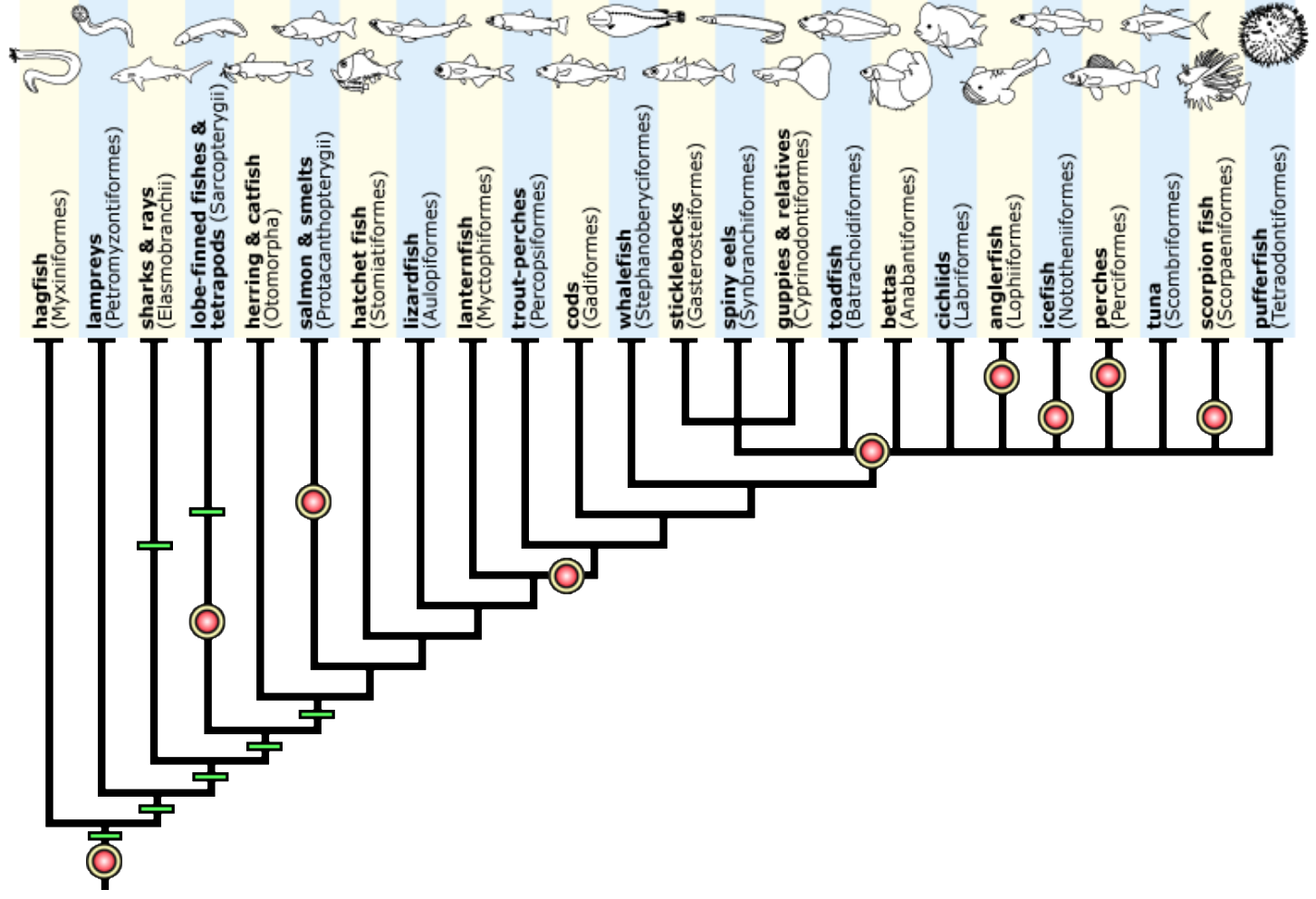


Figure 32-9 Biological Science, 2/e  
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# Fish phylogeny



Cladogram of Animalia (small part)

