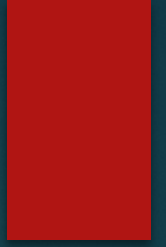
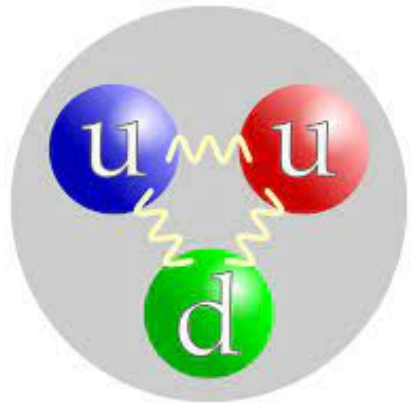


Quarks to Quasars

Or science for creationists
V. Life to Man



Outline/Review

- ▶ I. Introduction – importance, improbability, theory flaws
- ▶ II. Quarks and Atoms – atoms, quantum mechanics, BB/string theory (7 extra dimensions)
- ▶ III. Molecules and Cells – many complex systems but great order; impossible odds
- ▶ IV. Cells=Life – organelles, reproduction, abiogenesis
- ▶ V. Life to Man
 - ▶ Population principles/arguments
 - ▶ Classification of life
 - ▶ Journey to Man: Animalia, Chordata, Mammals, Primates, Hominids

Broad principles in studying science

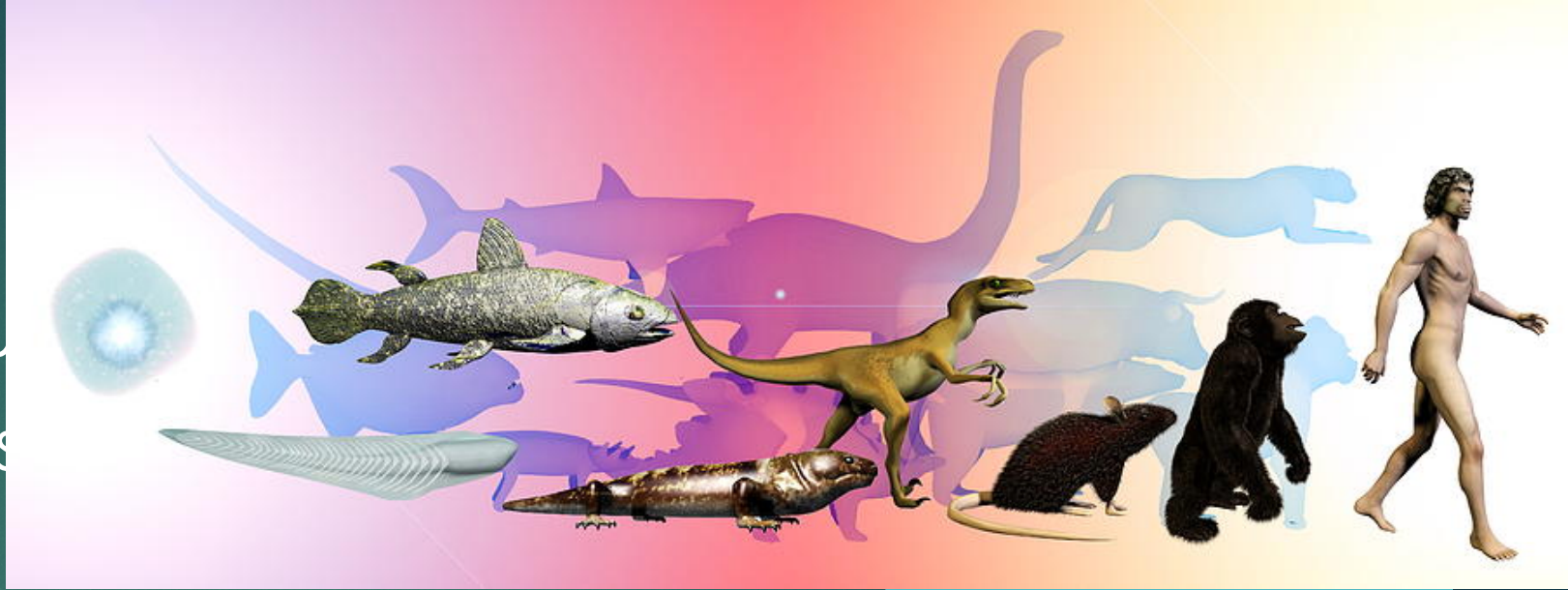
- ▶ Wrong assumptions/biases commonly lead to wrong conclusions.
- ▶ Hierarchy of (un)certainty in science:
 - ▶ facts, provable theories, principles, hypotheses, thoughts, opinions
- ▶ Things are more complex than portrayed
- ▶ ?More faith to believe in evolution than creationism
- ▶ Knowledge is power (F Bacon, *Meditations Sacrae*, 1597)
- ▶ we should strive to know what we can so as to avoid being marginalized or intimidated by “experts”
 - ▶ John 8:32 and ye shall know the truth and the truth shall make you free
 - ▶ Prov 24:5 - A wise man is strong; yea, a man of knowledge increaseth strength.

Recurring “proof” themes (evaluate these throughout)

- ▶ Mathematical improbabilities
- ▶ Violations/misapplications of logic and scientific principles
- ▶ Supernatural design (vs results of natural selection)
- ▶ Contradictions of Scripture/theological bases

Purpose of

- ▶ Mathematics of population
- ▶ Classifications systems
- ▶ “Journey to Man”



- ▶ Trace just a few of the many innovations that a common ancestor needed to “ascend” the taxonomic ladder to man
- ▶ Recognize the HUGENESS and all or none of changes, the lack of intermediate forms (or even the possibility)
- ▶ Gain some superficial appreciation for how imagination and even hoaxes have fueled the narrative just of apes to man

Math is against (long) evolution

► Where are all the fossils or bones? (exponential gets you!)

- $F_N = (1+x)^N$ where F_N is the #F's in the Nth generation; $1+x$ is number of assumed F/ generation (slightly more than one); remember this is just females; x2 for all
- Cumulative total is $\int F_N dN = (1+x)^N / [\ln(1+x)]$

- E.g. Assume 1.075 females per generation, and $6000/20 = 300$ generations; then there should be 2.6B F's after 6000yrs (pretty close!) and 33B that have died ($\sim 3 \times 10^{10}$)

- but if assume for even 100 000 yrs, or 5K gens, = 10^{157} now and 5×10^{157} dead

- (Even if assume $x = 0.01$, get 4×10^{21} and 5×10^{22} dead)

- Another way to calculate current population: 0.4% growth rate/yr: $(1.004)^n = 25B$ for $n=6000$ yrs; $=10^{173}$ for 100K yrs [cf $(1.005)^{4500} \approx 6B$]

- Volume of a human skeleton is ~ 15 liters ($15 \times 10^{-4} \text{ m}^3$); Volume of Earth = 10^{21} m^3

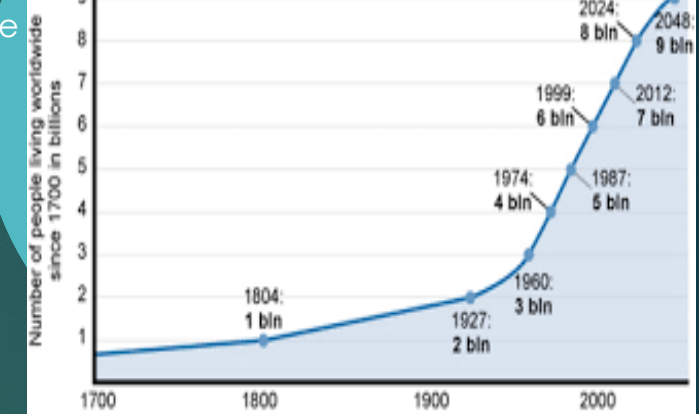
- 3×10^{10} dead = volume of $4.5 \times 10^7 \text{ m}^3$, which is small fraction of V earth ($< 1 \text{ m}$)

- 15×10^{157} dead is about 10^{132} Earth volumes!!!!

- 5×10^{22} dead would be about 0.9 of an Earth volume, or 97% of the Earth's radius!!!!

- And this is just HUMAN skeletons; consider other species!

► Population curves look like much shorter history

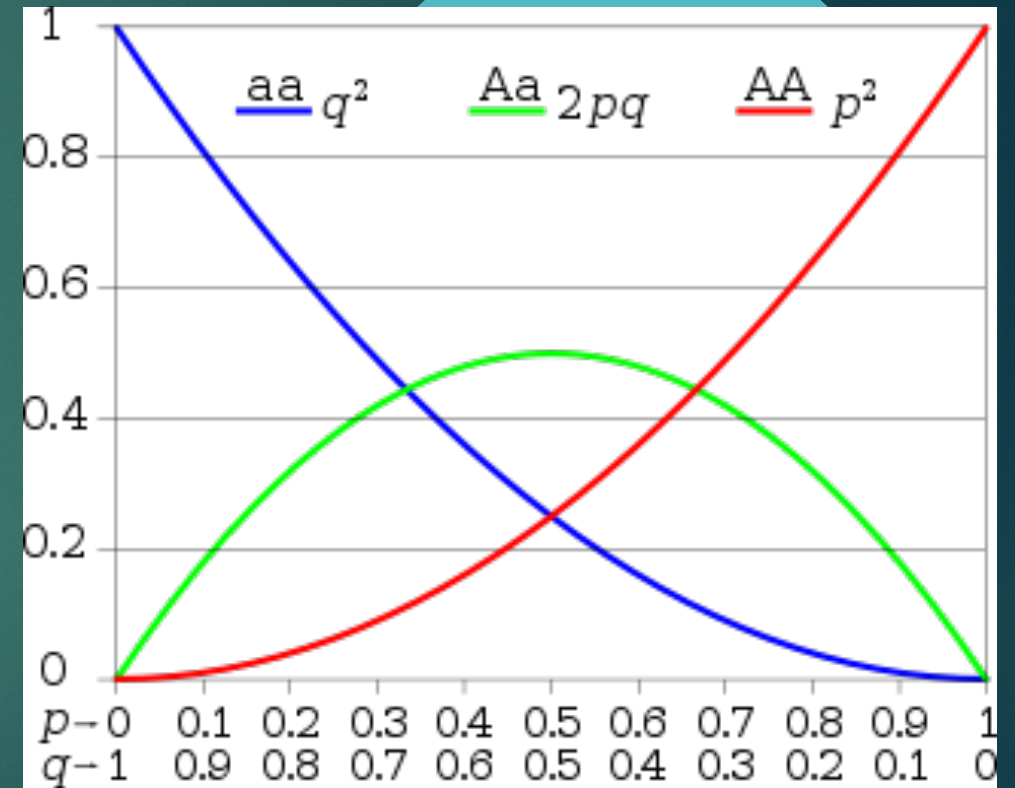


Data sources: Up to 2015 OurWorldInData series based on UN and HYDE. Projections for 2015 to 2100: UN Population Division (2015) - Medium Variant. The data visualization is taken from OurWorldInData.org. There you find the raw data and more visualizations on this topic. Licensed under CC-BY-SA by the author Max Poser.

Gaining function is antithetical...

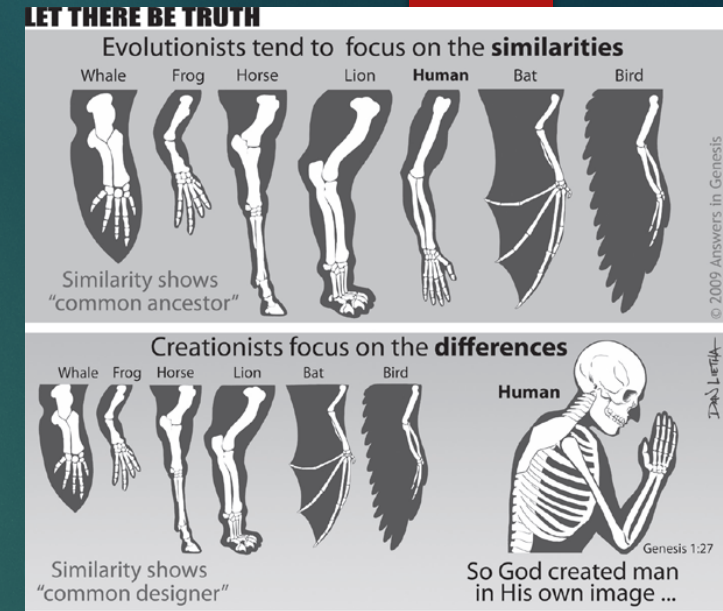
Hardy-Weinberg Principle (Equilibrium)

- ▶ 1908
 - ▶ Hardy – a British mathematician
 - ▶ Weinberg – a German practicing OB/gyn
- ▶ Allele, genotypes should remain or approach equilibrium in a population unless other outside influences; limited by resources available
- ▶ “regression to the mean”
- ▶ No “drive” for evolution on a statistical basis
- ▶ **Is Evolution anti-globalism?**
 - ▶ that is, are some better than others
 - ▶ This kind of principle led to Nazi master race ideas; underlaid racism
 - ▶ Rom 2:11 - For there is no respect of persons with God. (and Acts 10:34)



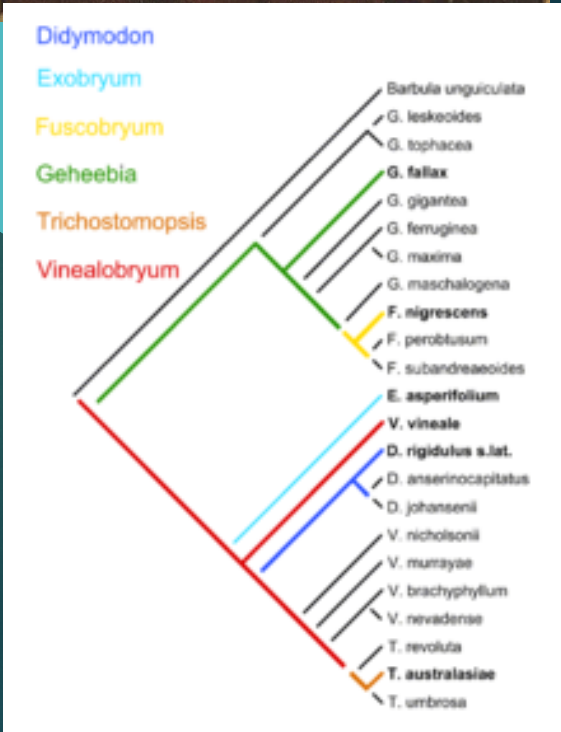
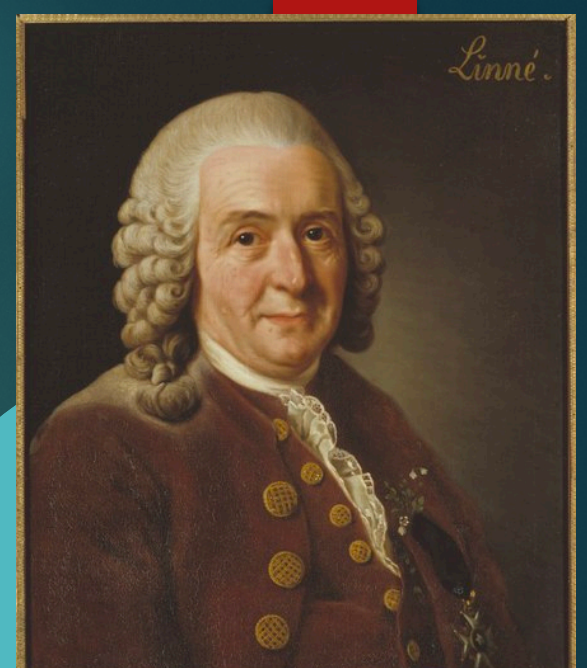
Cracks in Tenets of Evolution

- ▶ Dependence/emphasis on morphology/homology (Darwin's time)
 - ▶ Science has progressed:
 - ▶ Many more species discovered
 - ▶ Genetics and molecular biology are a problem for evolution
- ▶ Even in evolution circles, gradualism/uniformitarianism is being discarded
 - ▶ Transitional forms- there should be MANY; there are none definite
 - ▶ how could so many mutations occur from primitive ape to man in only, say 1M yrs (50,000 generations)?
 - ▶ ~1 in 10^4 (to 3/2000) mutations are ?positive ; 1.5 are "lethal" (eg most miscarriages)
 - ▶ Any Mutation needs to be "captured" in the germ cells, not just the somatic cells, to propagate
- ▶ (Fallacy of) Extrapolating from micro- (natural selection/adaptation) to macroevolution
 - ▶ eg NBA player height, callouses on hands/feet, suntan
 - ▶ Antibiotic resistance (at least many, ?all) are not mutations, but activated preexisting – bacteria that existed well before abx (eg in Black Plague issue)



Classification of life

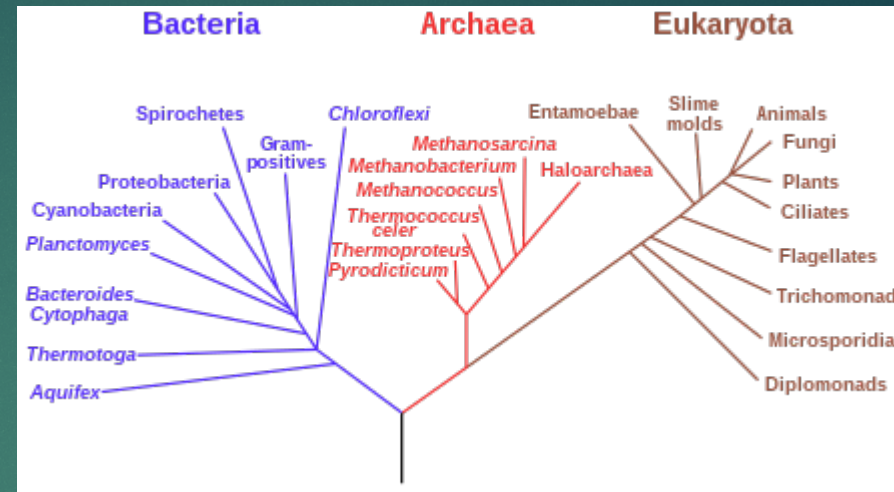
- ▶ Previously, Aristotle, not much else
- ▶ Carl Linneas (1707-78) – “father of modern taxonomy”
 - ▶ Born to a Lutheran minister in Sweden, trained in Netherlands
 - ▶ Professor at U of Uppsala
 - ▶ Published *Systema Naturae* in 1735; successive editions altered
 - ▶ 4400 animal species; 7700 plant species (10th edition 1758)
 - ▶ Now 1.7 million (or 8M?); 17 000 added annually; ?might be 100 M?
 - ▶ Lauded by philosophers Rousseau, Goethe
- ▶ Only later, post Darwin, evolutionary organization - cladistic
 - ▶ But only morphology/homology; no molecular
 - ▶ ie limbs/wings; cf. wheel in divergent uses



Classification of life (Taxonomy)

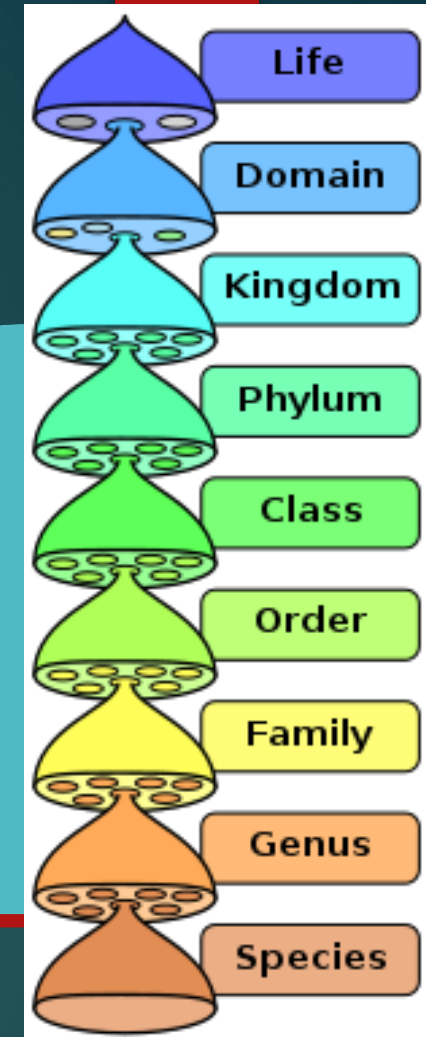
“KaPaCOFaGS”

- ▶ (Domain/Realm) (Woess, 1990)
- ▶ Kingdom
- ▶ Phylum (Haeckel, 1866)
- ▶ Class
- ▶ Order (suborder, intraorder)
- ▶ Family (Tribe)
- ▶ Genus
- ▶ Species
- ▶ Eg, man is: Animalia, Chordata, Mammalia, Primates (Haplorhini/ Simiiformes), Hominidae (Homininae, Hominini), Homo, homo sapiens
- ▶ Cf “kinds” in Scripture
- ▶ To be fair, this is for classification, but it implies a ladder of evolutionary steps



Gives rise to making a “tree” to imply evolutionary complexity/pathway
BEWARE: these are hypotheses only

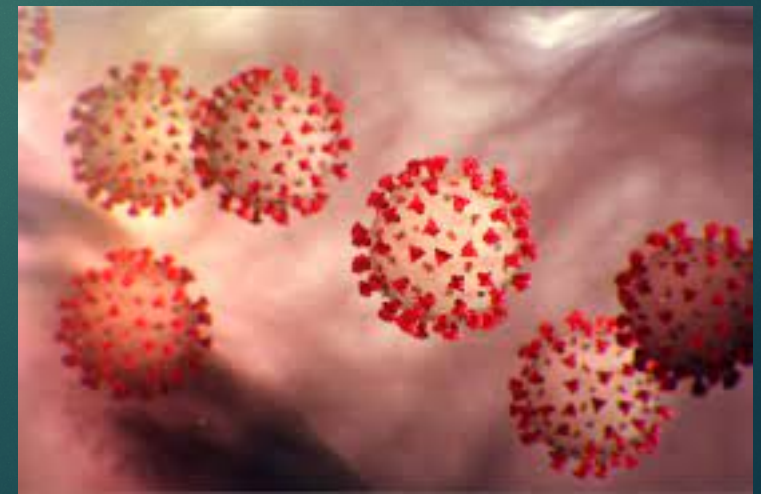
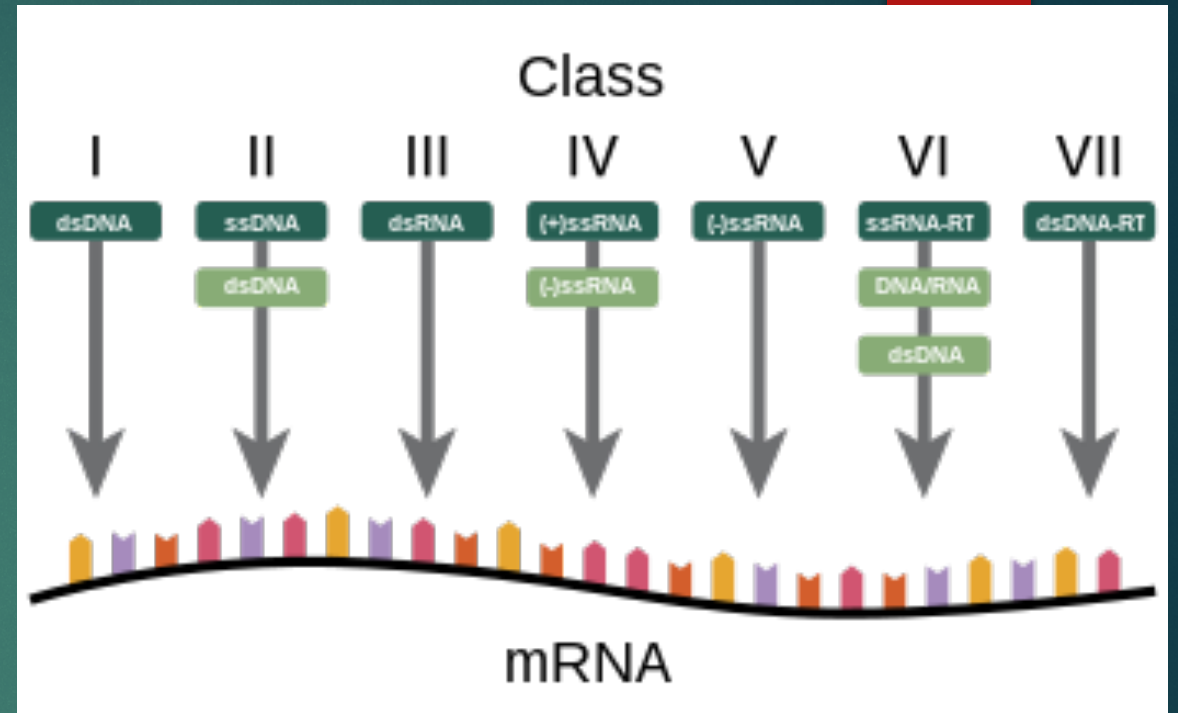
Definition of species: a group of living organisms consisting of similar individuals capable of exchanging genes or interbreeding.



BUT, species definition can be very fuzzy and changing

Viruses – outside of “Life”

- ▶ Baltimore Classification – I-VII
- ▶ Only I, IV, V, VI can infect humans
 - ▶ dsDNA (I): herpes, smallpox
 - ▶ +ssRNA (IV): *Corona, rhino, polio*
 - ▶ ~30k bases, one of the largest
 - ▶ -ssRNA (V): influenza (1918), MM, Ebola
 - ▶ Retro (VI): HIV
 - ▶ ds, ss; DNA vs RNA, +/-, retro
- ▶ Not considered life since they cannot self replicate
- ▶ Debate in evolution – life or virus 1st
 - ▶ Some “embedded” in animal DNA?

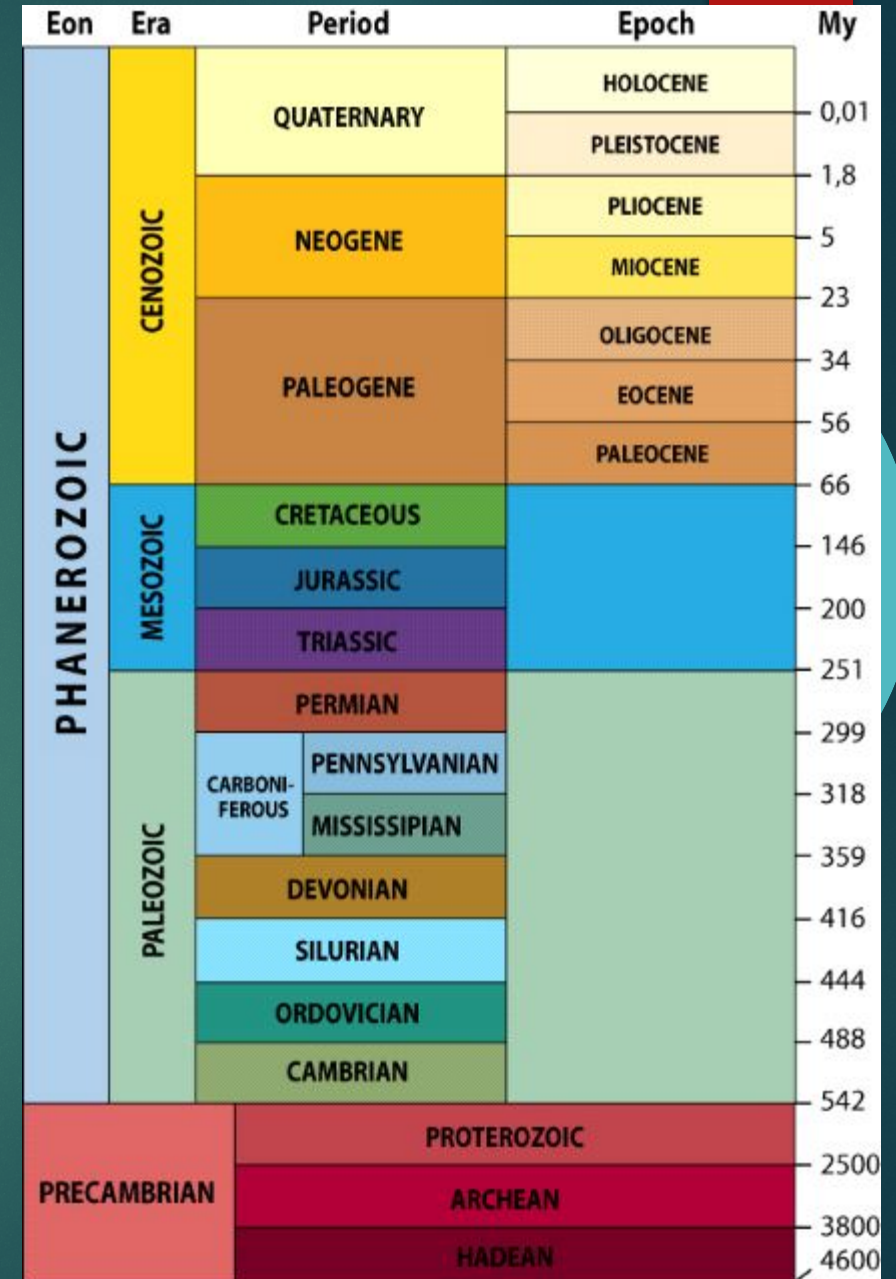
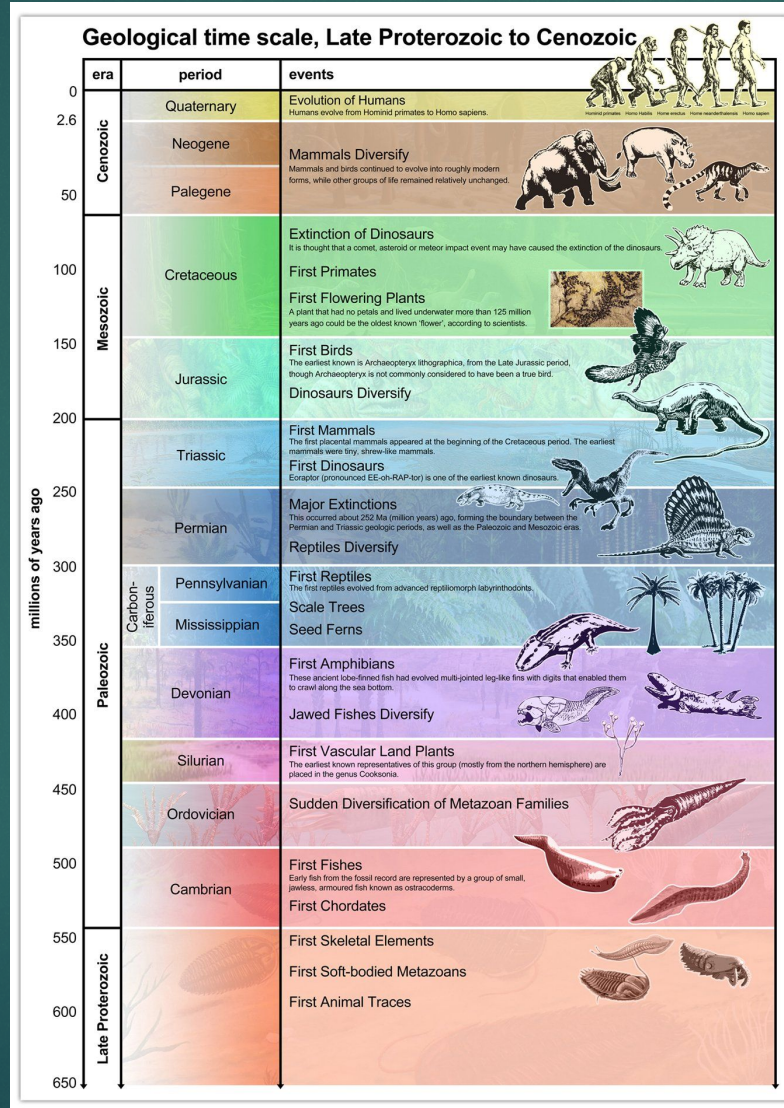


Cf Prions – eg BSE/mad cow disease

Geological Ages

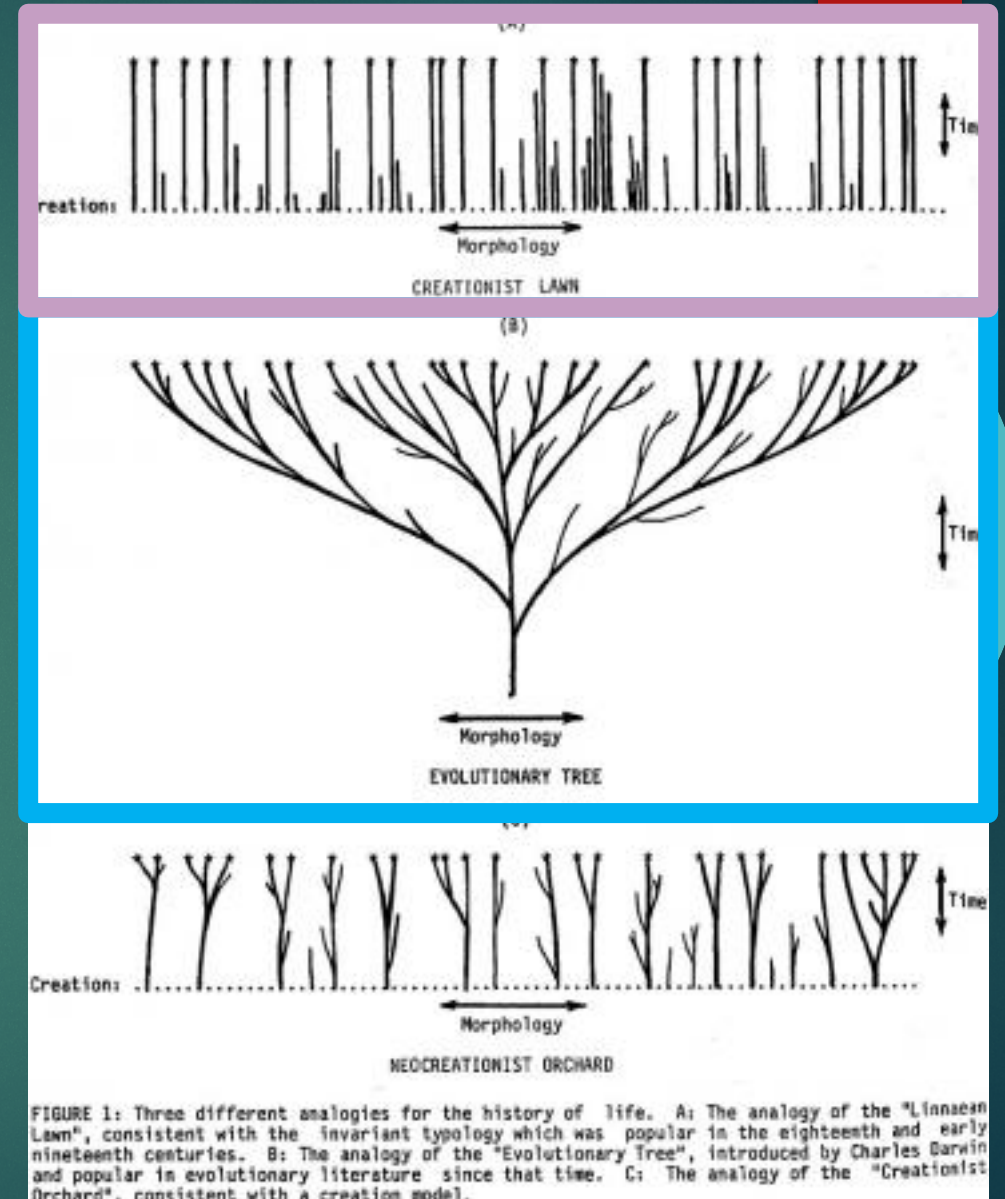
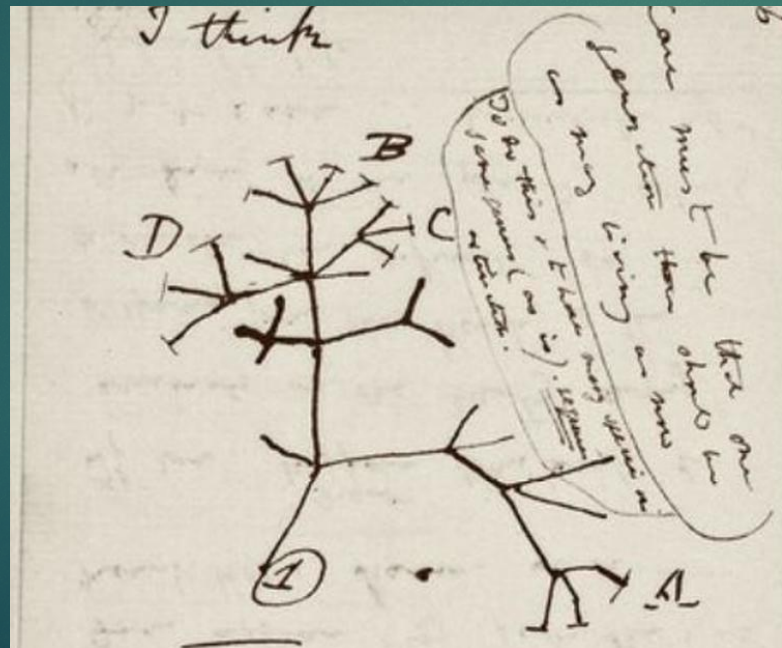
These are circularly defined!

Smaller things will sediment to bottom of larger things after a Flood... (or the bottom of your toolbox or drawer) even if not older!



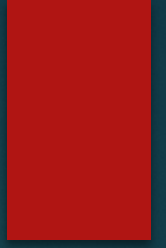
“Tree of Life”

- ▶ Common ancestor or many ancestors?
- ▶ Which is more c/w findings?
- ▶ Darwin's notebook:



So lets try to work with the tools of evolution...

"Journey to Man"
Major steps required



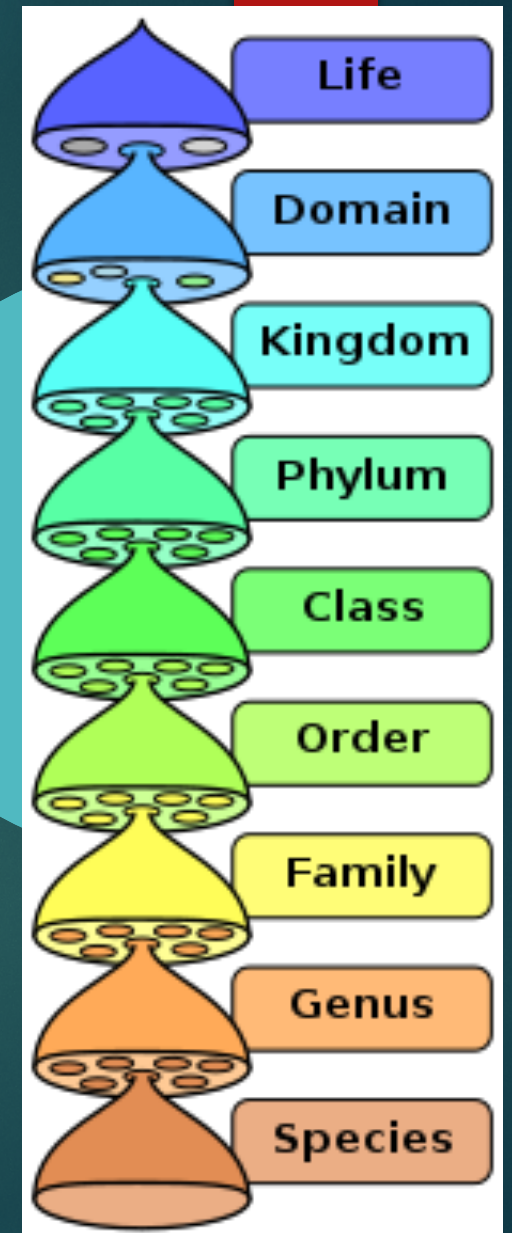
Domains/Realm- introduced 1990 (3 domains; 5 or 6 kingdoms)

Formerly,
Monera

1. Archaea – lack nucleus, single cell, asexual reproduction; prokaryotes
 1. Cf nonlife: self propagating; free RNA sequences; viruses, prions
2. Bacteria – used to be grouped w Archaea

Eukaryotic cells

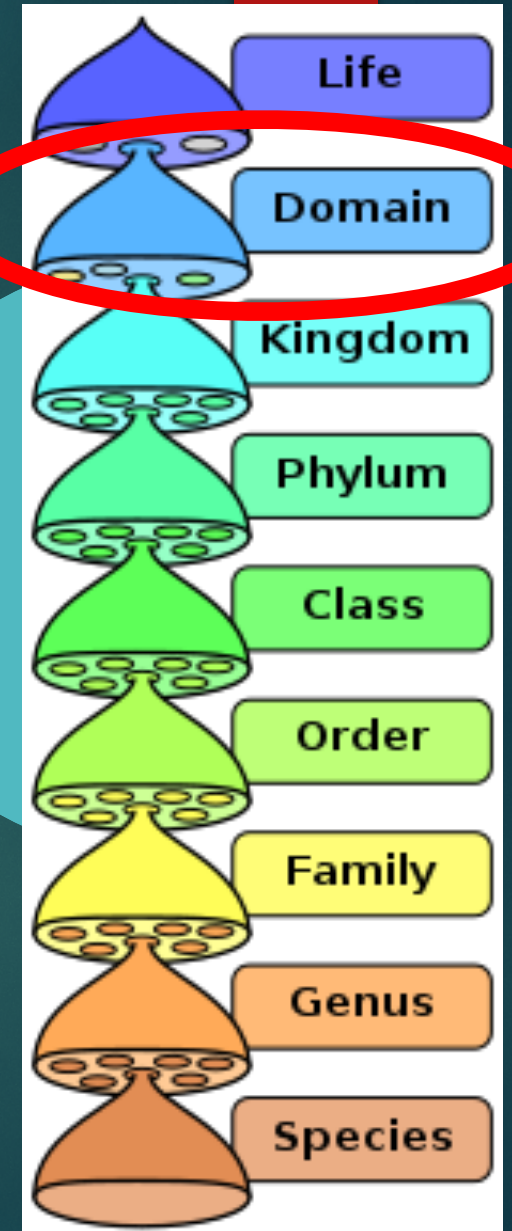
3. Eucarya
 1. Protista
 2. Fungi
 3. plantae
 4. **Animalia**



Previously we have touched on this...

Step from Monera to Eukarya Domain

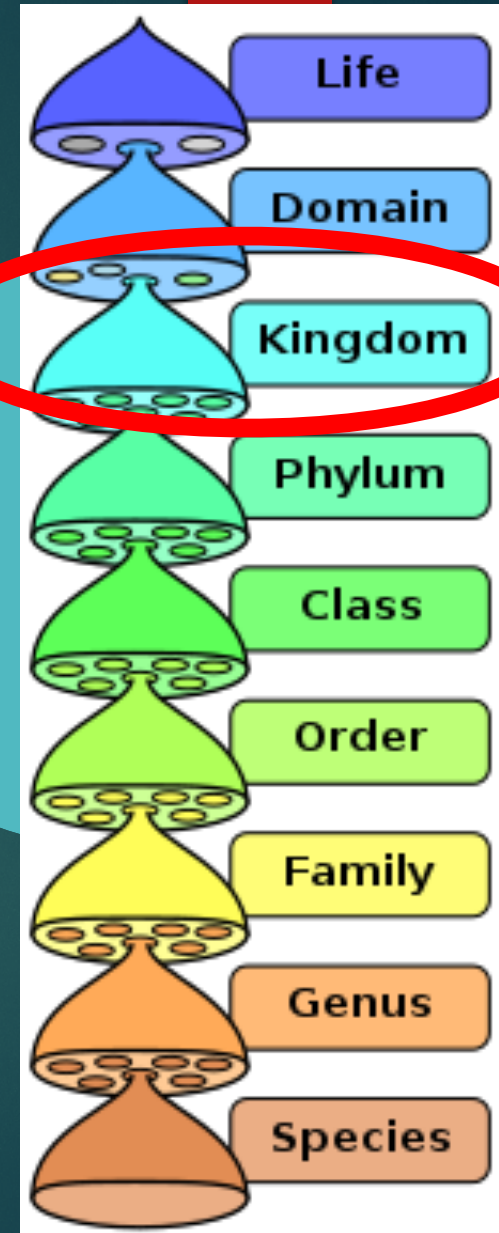
- ▶ Prokaryotes already used Krebs, DNA, organic molecules, flagella, etc (ie not “simple”)
- ▶ Prokaryote to eukaryote
 - ▶ Cell organelles
 - ▶ Membranes
 - ▶ multi-cellular organisms requiring differentiation



Steps from Eukarya Domain to Animalia Kingdom

(zoology, cf zoon in Rev)

- ▶ Breathe O_2 – develop exchange mechanism
- ▶ Move – legs, wings, etc
- ▶ Reproduce sexually – organs, DNA/chromosome organization and division mechanisms, genetic modifications
- ▶ Ontogenetic stage – development, differentiation (embryonic); ordered purpose for the 3 germ layers




Animalia Kingdom

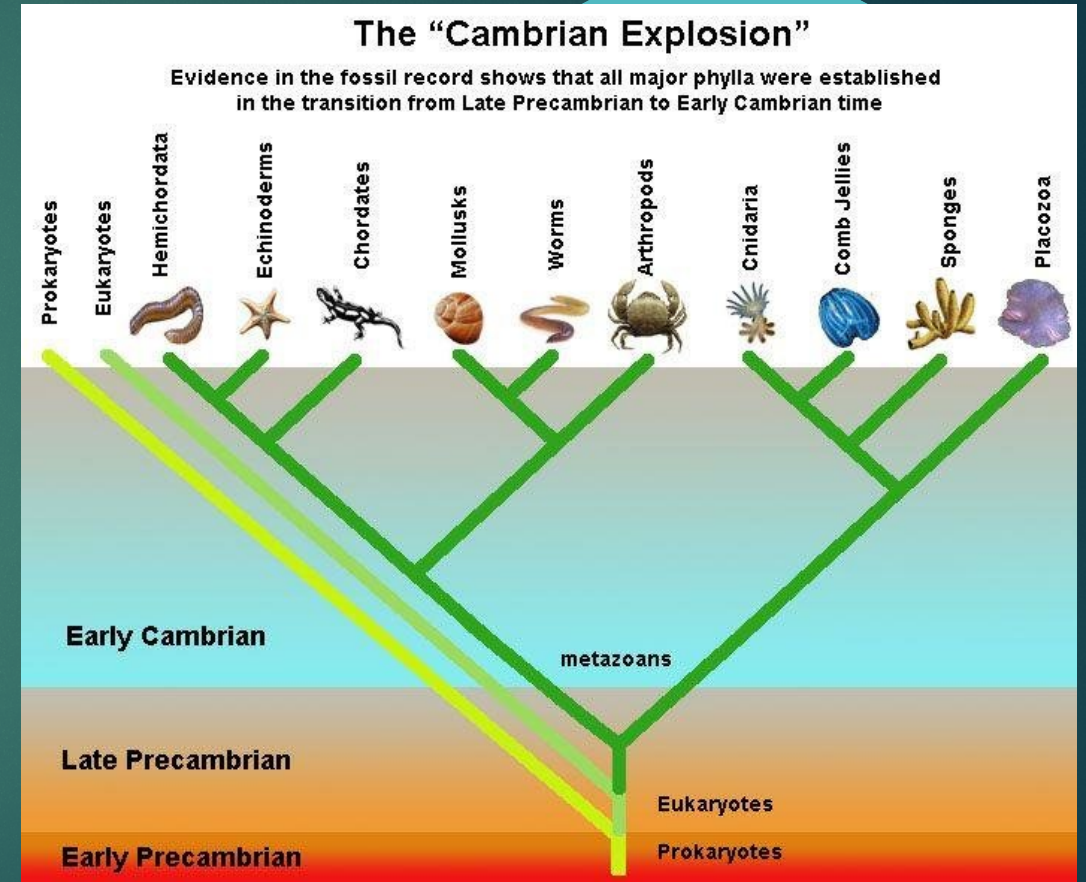
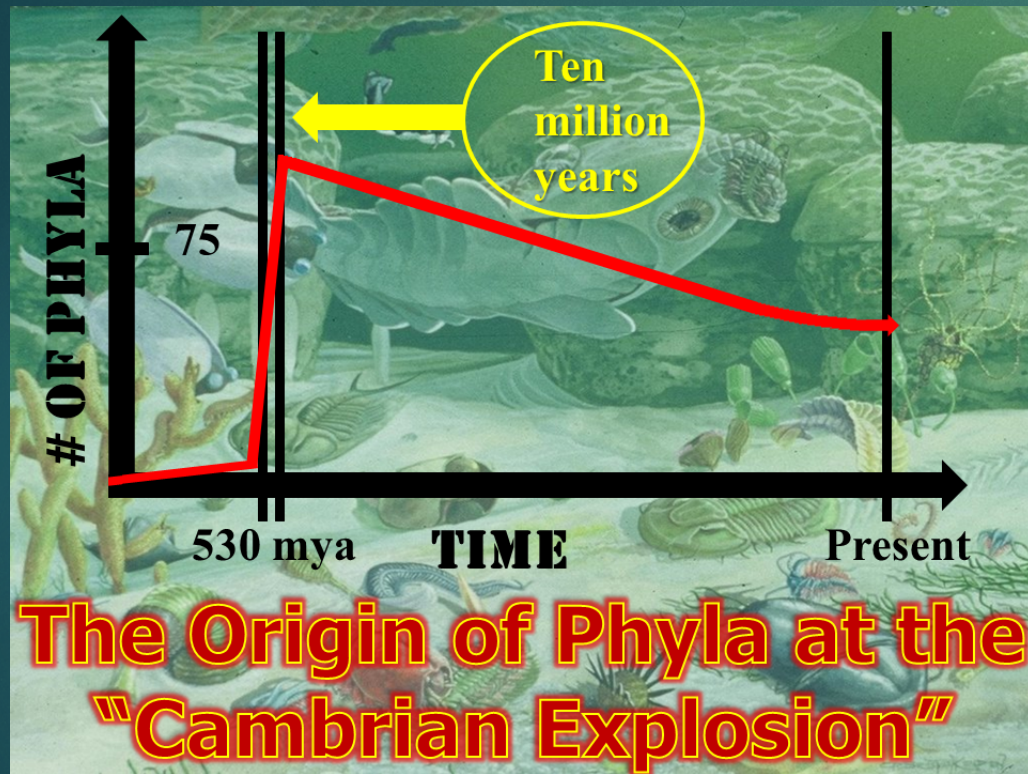
- ▶ 31-40 animal phyla-
- ▶ 11 most important
- ▶ Man is phylum chordata (~backbone)



But we need a small side trip for perspective....

Phylum	Example	No. of Species (est.)	Description
Annelida		17,000	Distinct body segmentation. Most are marine, some freshwater and moist terrestrial, e.g., earthworms and leeches.
Arthropoda		1,257,000	External skeleton, paired, jointed appendages; molting, open-circulation system, e.g. cockroach, fly, mosquito, tick, crayfish, brine shrimp
Bryozoa		6,000	Most marine, few freshwater invertebrate moss animals; captures and filters nutrients via pores
Chordata		45,000 – 65,000	Both aquatic and terrestrial; possessing vertebral column.
Cnidaria		16,000	Most marine, some freshwater; radial symmetry, using stinging tentacles to capture prey, reproduces sexually or by budding, e.g., jellyfish, hydrozoans, coral animals.
Echinodermata		7,500	All marine, most on ocean floor; most have radial symmetry, tube feet in some species, slow ocean floor movement in most, e.g., sea stars, sea urchins.
Mollusca		85,000 – 107,000	Marine, freshwater, moist terrestrial; mantle that can secrete material that becomes shell; mantle cavity housing gill or lungs; e.g., snails, slugs, oysters, clams, octopus, squid.
Nematoda		25,000	Almost all environments; most are small in size, some are a few meters in length; many are crop pests and animal parasites; e.g., roundworms
Platyhelminthes		29,500	Marine, freshwater or moist terrestrial; bilateral symmetry, hermaphroditic, possess organs, no central cavity, many are parasites, e.g., flatworms, tapeworms.
Rotifera		2,200	Freshwater and a few marine; bilateral symmetry, the body is divided into a head, trunk, and foot, and is typically somewhat cylindrical.
Porifera		10,800	Marine and a few freshwater; sessile, no symmetry, captures nutrients via pores, bodies without organs or true tissues, e.g., sponges

Cambrian Explosion- lots of life suddenly “appeared” 500my ago



Hmmm. Any other idea how that might be?

Time out! Consider what this means

- ▶ Molecules and compounds
- ▶ Formation of cell membranes
- ▶ Organelles
- ▶ NOW THERE IS A SINGLE CELL (eg bacteria)
- ▶ Then multicellular organisms (“explosion”) producing all this biodiversity and complexity within **10 million years** or so
 - ▶ Mechanisms of reproduction, energy, growth, etc
 - ▶ Different tissues (bone, muscle, etc)
 - ▶ Then progressively larger into “real” organisms (eg fish, mammals)
- ▶ And this transition occurred within a few million years during the “Cambrian explosion” to include **ALL 11 MAJOR ANIMAL PHYLA!!!**

A few billion years
(something we can almost begin to duplicate)

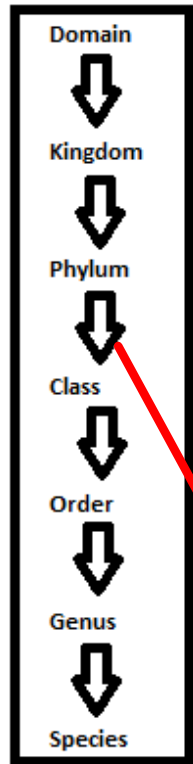


Evolutionist's theory to explain- introduce terms

- ▶ “hidden evolution”
- ▶ “Critical constituents” had not evolved and when they did, there was explosion of life
 - ▶ Oxygen, carbonates, phosphates (all ~same time?)
- ▶ “convergent evolution” (vs parallel– sort of a recruitment of function somehow makes better “chances” so faster
- ▶ Dullo’s Law – once a more advanced change has occurred, it cannot reverse; basis?



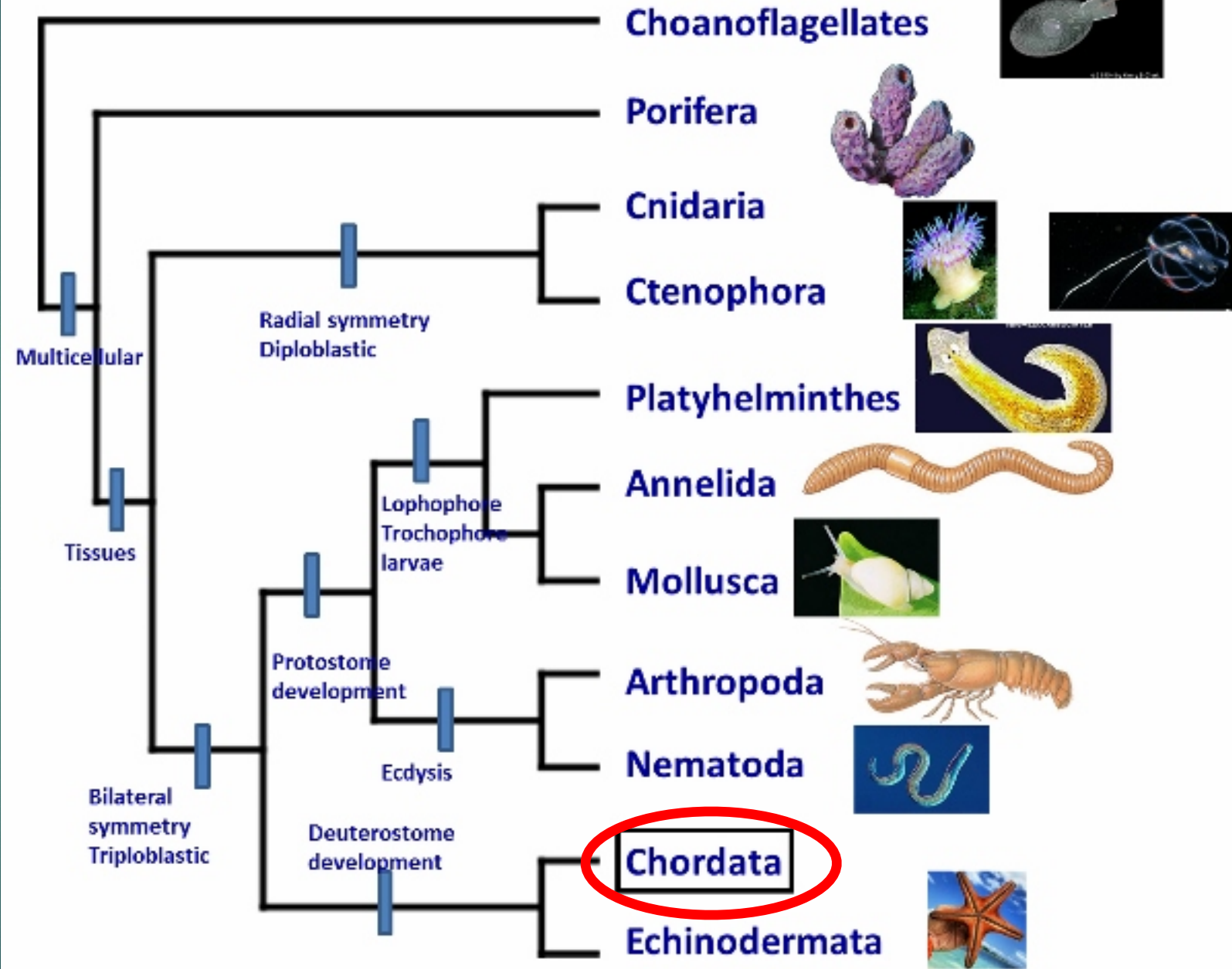
Back to our Journey to Man



Domain: Eukaryotes
Kingdom: Animalia

Major Included Phyla:

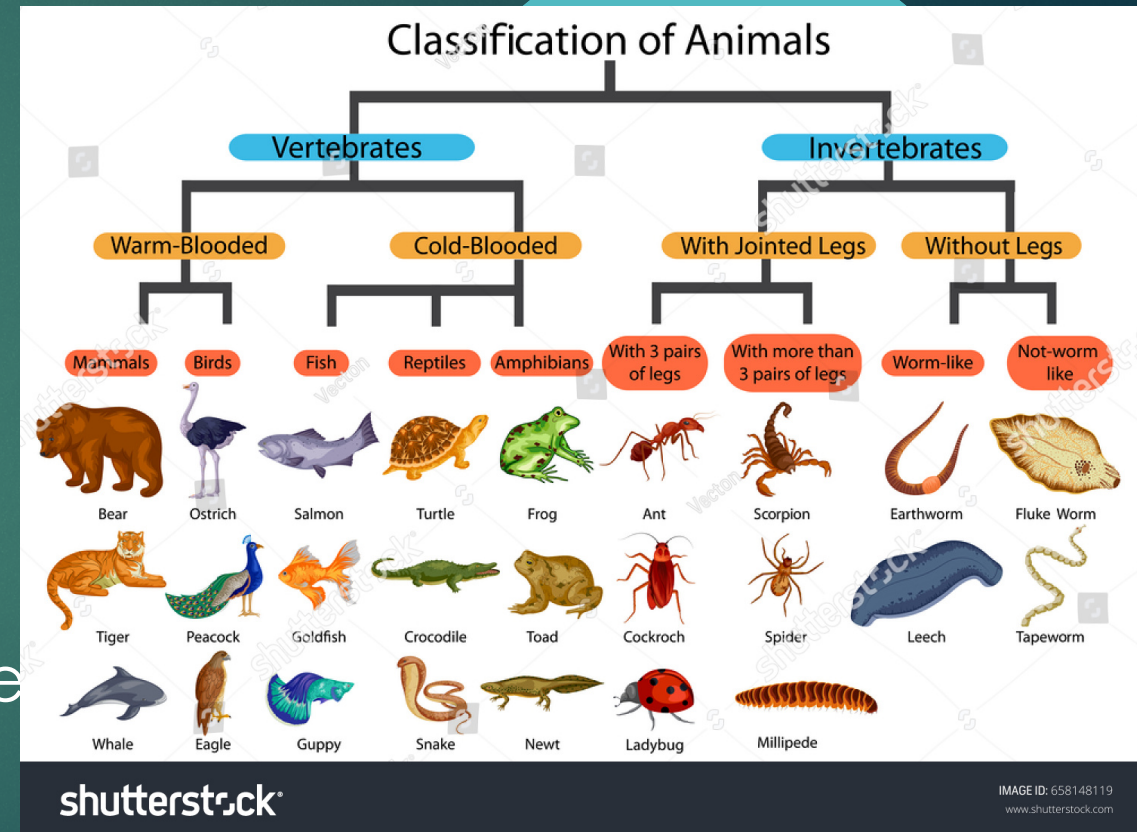
- Porifera
- Cnidaria
- Platyhelminthes
- Nematoda
- Annelida
- Arthropoda
- Mollusca
- Echinodermata
- Chordata



Deuterostome – anus formation before mouth during embryonic development

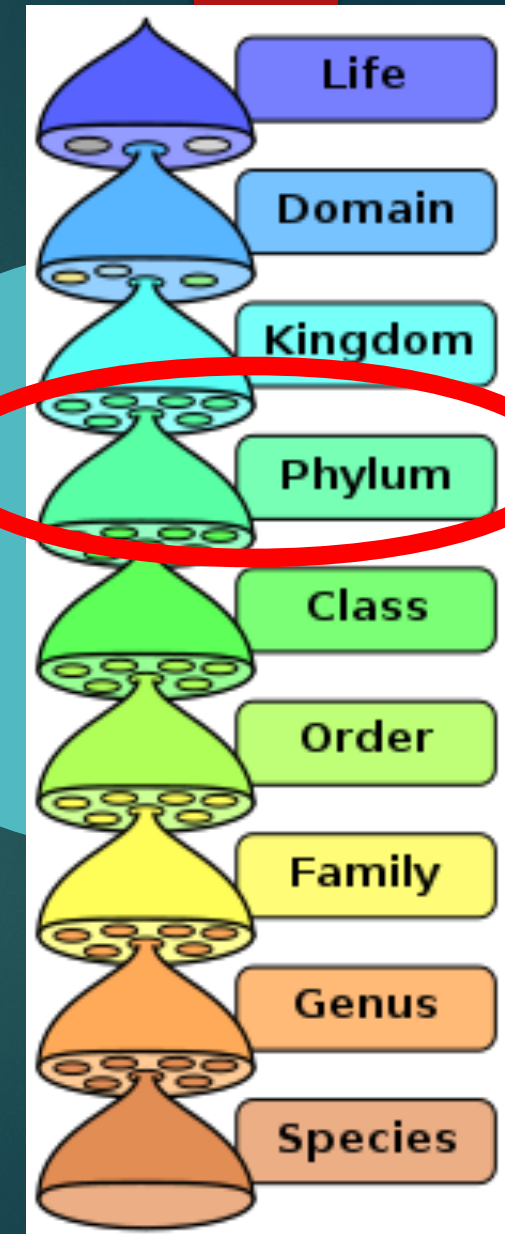
Invertebrates to subphylum vertebrates (backbone)

- ▶ In more specific terms, how did **CHORDATES** develop?
- ▶ (All chordates are not vertebrates)
- ▶ A major puzzle for evolution
- ▶ There is about a 100my period after “explosion” and suddenly they appear
- ▶ No intermediate forms for a backbone
- ▶ why must we assume a transition? There are plenty of invertebrates today



Steps from Animalia kingdom to Chordata phylum

- ▶ Develop a notochord (cartilage, backbone)
- ▶ Dorsal , hollow nerve cord (spinal cord)
- ▶ Mechanism to filter feed (said thyroid is remnant)
- ▶ Pharyngeal slits (related to feeding)
- ▶ Develop a tail (bone) behind anus



Phylum Chordata (~vertebrates)

▶ 5 common classes (there are more)

▶ Fish

▶ Amphibians

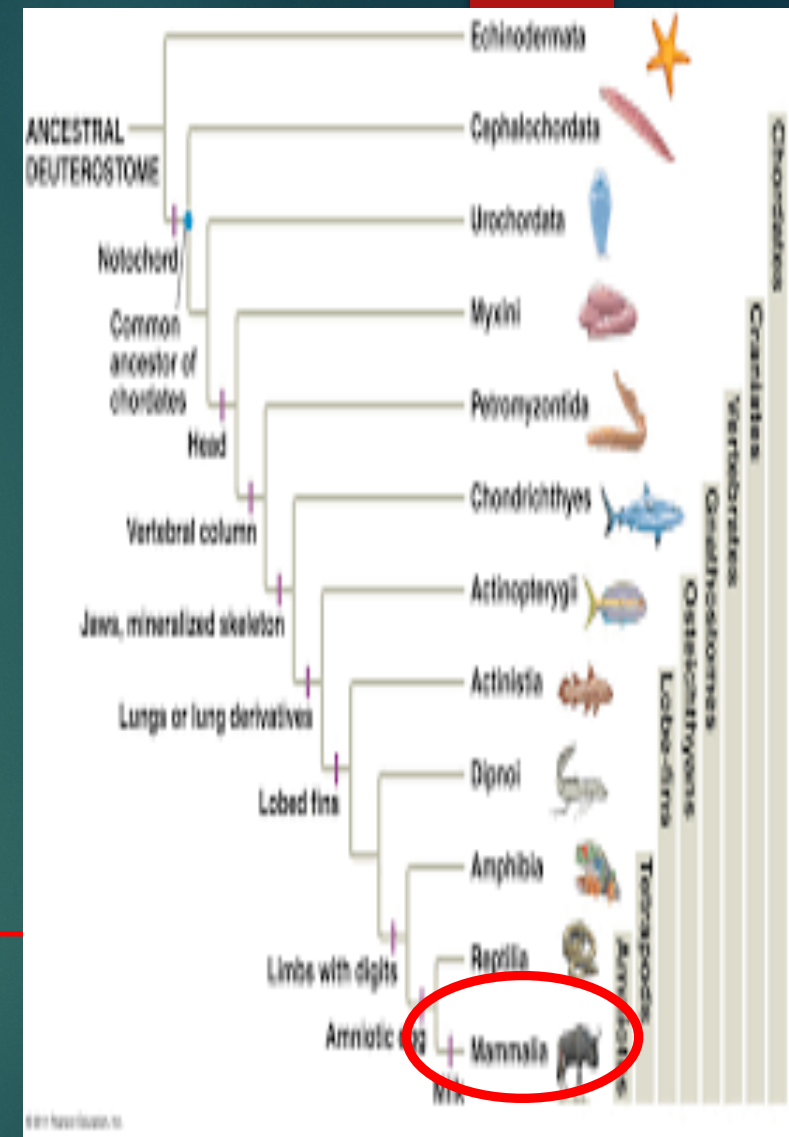
▶ Reptiles

▶ Birds

▶ Mammals

Cold blooded

Warm blooded



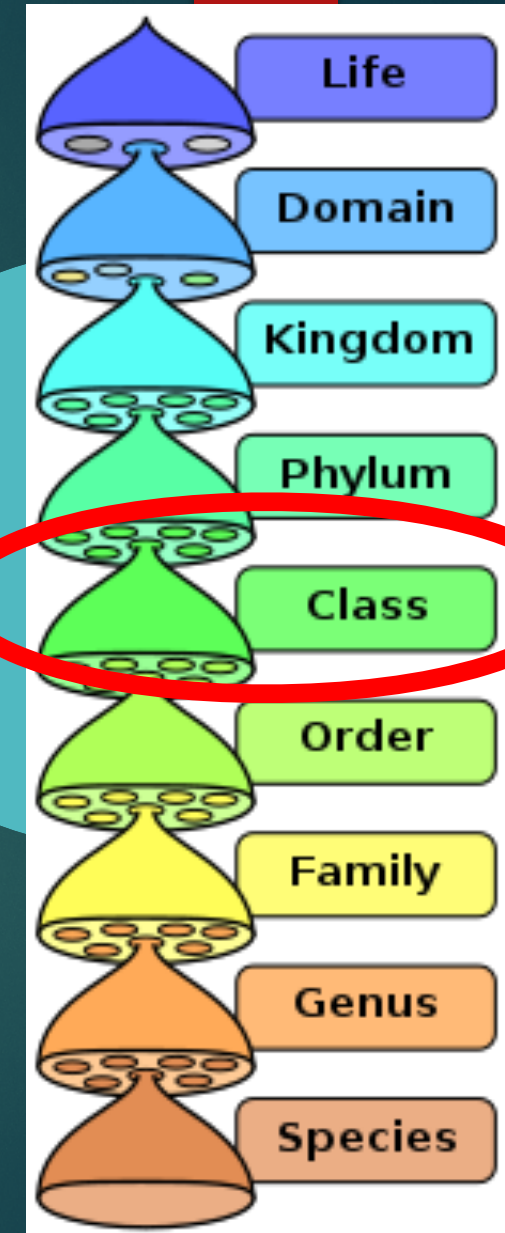
Evolutionary Dogma



Features for transition to warm blooded- 7X metabolic rate, body hair, water/chemical control, kidney/BP; are transitions even possible? No examples

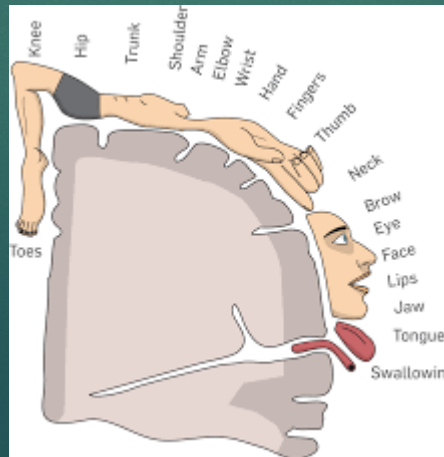
Steps from Chordata phylum to Mammalia class

- ▶ Develop **mammary glands** that have just the right nutritional components, function around childbirth, produces enough for the offspring to survive (not to mention constitution changes)
- ▶ A major, **higher order brain** section (neocortex) “develops” – who did it communicate or interact with in this way to stimulate it?
- ▶ **Hair**, fur is NOT c/w scales
- ▶ **Middle ear bones** (reptiles, amphibians birds only 1; fish 3; none- none with 2; would have to work and have major structural/neural connections from the start)
- ▶ **Bone structures** – eg single jaw bone (cf Sampson Judg 15:16)
- ▶ **WARM BLOODED IS HUGE**; regulatory mechanisms, 7x the energy needed



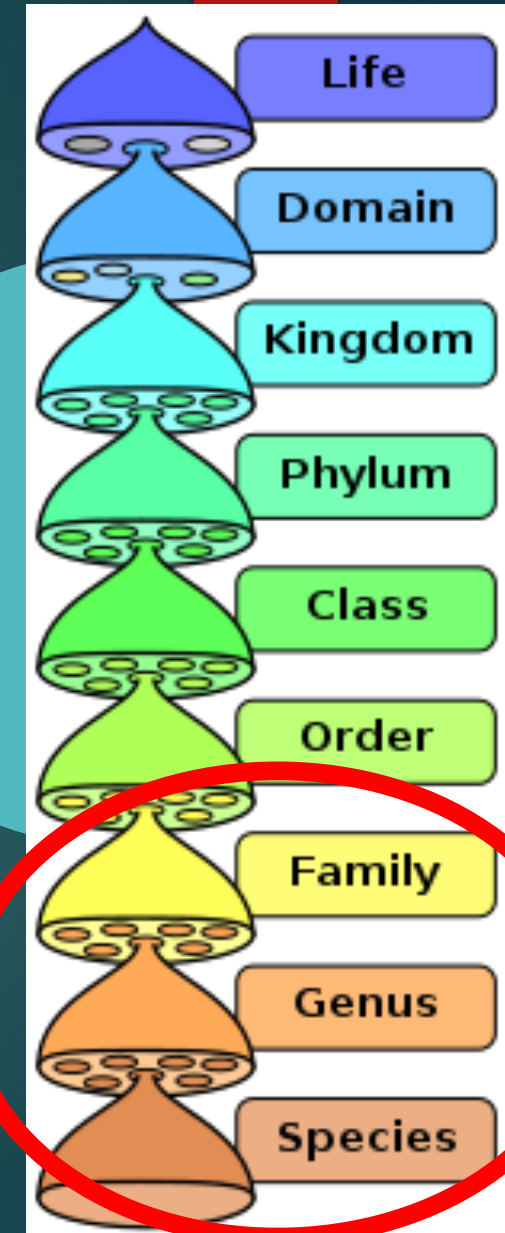
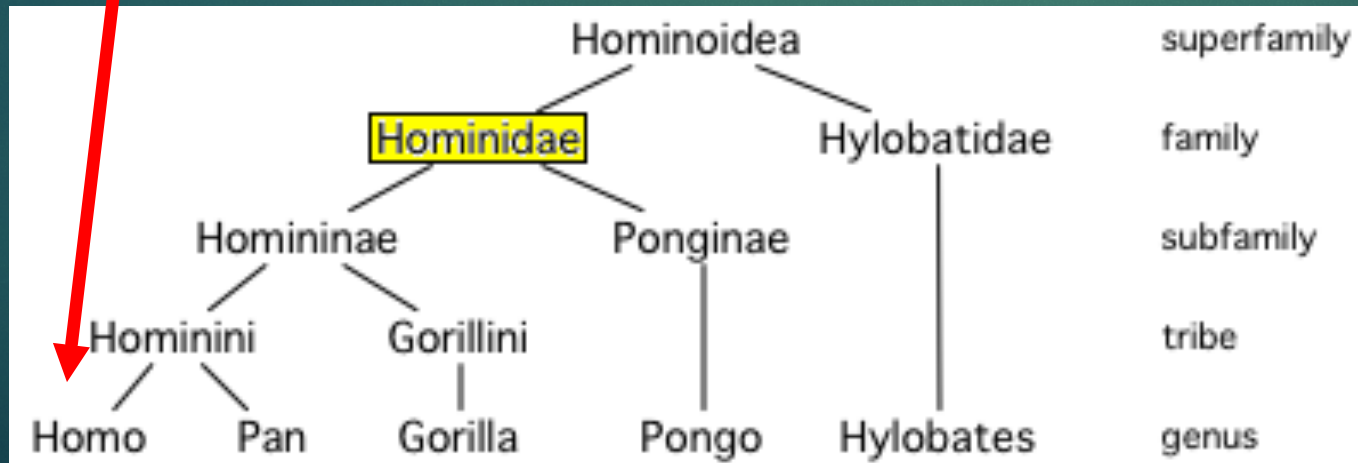
Steps from Mammalia class to Primate order

- ▶ Develop larger brains
- ▶ Why lose smell?
- ▶ Hand develops
- ▶ Longevity
- ▶ Interactions complex



Steps from Primate to Man

- ▶ Hominidae **family** – can walk upright/bipedalism- 4 genera
 - ▶ Homo (man), pongo (orangutan), gorilla, pan (chimp)
 - ▶ Most recent Hominidae ancestor – 14 my
 - ▶ Many subcategories here
- ▶ Homo **genus** – only man
- ▶ Modern human (homo sapien) is **only living species** in genus Homo genus
 - ▶ Higher intellectual functions; forearm development



Evolutionary canon: Apes to Man

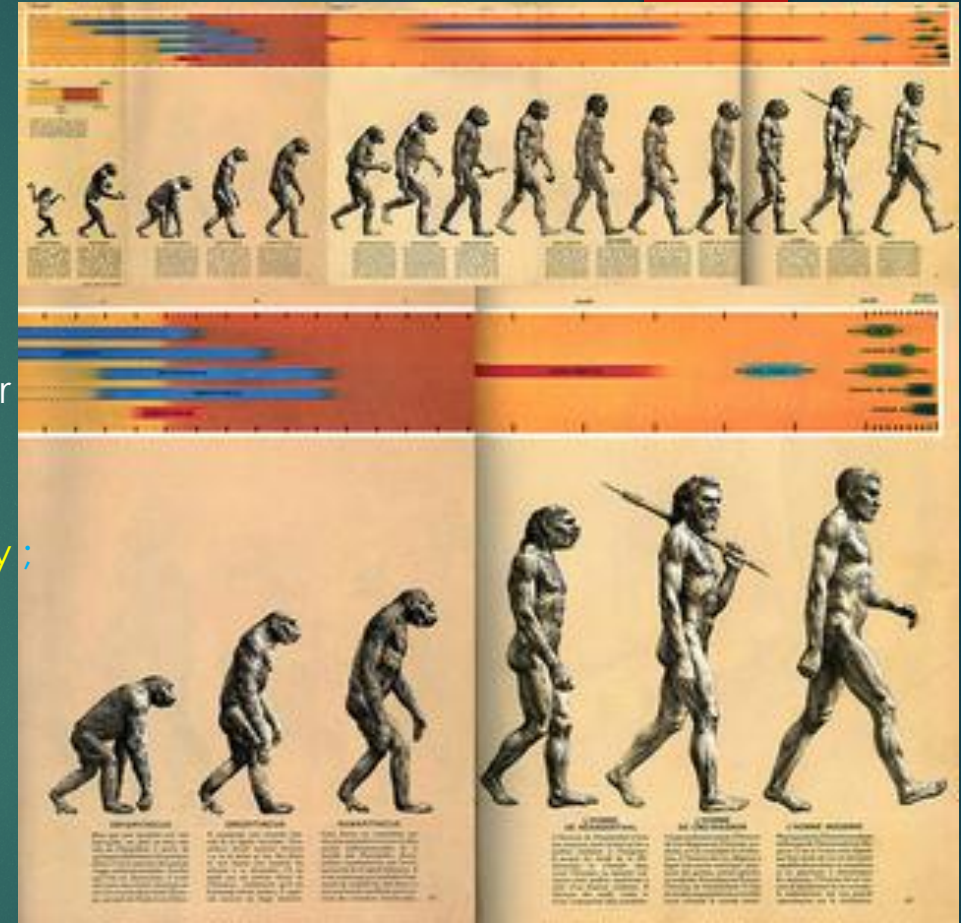
▶ “25 million years of evolution” - much debate on pathway

genus pithicia
-new world monkeys

- ▶ Pliopithecus, 22–12 My "ancestor of the gibbon line"
- ▶ **Ramapithecus**, 5M yrs ape/possible ancestor of modern orangutans (now considered a female Sivapithecus) and not universally considered ancestor of man)
- ▶ **Australopithecus**, 2–4 My; then considered the earliest "certain hominid"; Dart (1924) Johansson(1973 in Ethiopia – Leakeys agreed was hominid; **Lucy**; ~3' tall **VERY FAST GROWTH!**

genus Homo

- ▶ **Homo erectus**, 700,000–400,000 yrs, (so similar, some consider h sapiens) ; about 6' tall, ~modern skull size
- ▶ Early Homo sapiens, 300,000–200,000 yrs; from Swanscombe, Steinheim and Montmaurin, then considered probably the earliest H. sapiens
- ▶ **Neanderthal Man**, 100,000–40,000 yrs
- ▶ **Cro-Magnon Man**, 40,000–5,000 yrs
- ▶ Modern Man, 40,000 yrs to the present

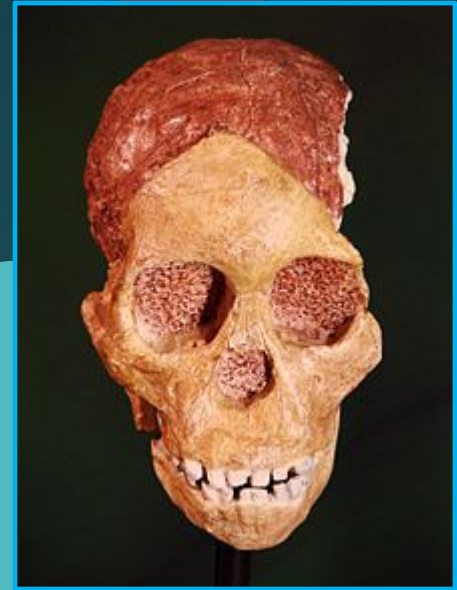


March of Progress (Road to Homosapiens), R Zallinger, 1st published in Early Man volume of Life Nature Library, 1965

A LOOK AT JUST SOME KEY ONES...

Australopithecus (“southern ape”)

- ▶ Said to be 2-4 million yrs ago
- ▶ 1st, quarry in 1924 in South Africa; R Dart studied
- ▶ Later, most notoriety, Leakeys (**Mary and Louis**, Ph. Ds; son Richard, never college), 1957, Olduvai Gorge, Tanzania; called it *a. bosei*, but likely same as Dart’s
- ▶ 35% size of human brain - ~chimp



Lucy – a media sensation (Australopithecus)

- ▶ Several fragments from multiple individuals
- ▶ Discovered 1974, in Ethiopia, D Johanson
- ▶ Only 300cc brain; 3' 7" tall
- ▶ Touted as a missing link
- ▶ Most complete was a knee joint
- ▶ Claim it represents earliest bipedal ancestor (ie first homonid), 3.2 my using K-Ag dating
- ▶ Serious debate -Similar wrist anatomy as chimps suggest not biped, rather a "knuckle walker"
 - ▶ No feet or hand bones to r/o
 - ▶ Nature, March 23, 2000; 339-40, 382-85
 - ▶ At least very different gait from man
- ▶ "Lucy in the Sky with Diamonds" song named for this



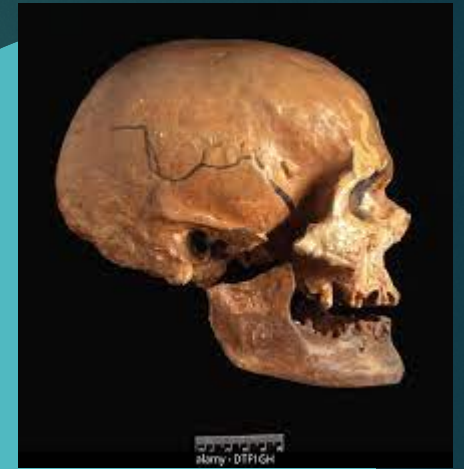
Neanderthal Man

- ▶ 400K to 40K yr ago; Europe and SW/central Asia
- ▶ Found in Neander Valley, Germany 1856
- ▶ Tools, fire, simple crafts clothing, seafaring, hunters; robust, shorter limbs, about 5' 5" males; brain size about 1600 cc
- ▶ Became extinct (?climate, diet, disease, genetic inbreeding)
- ▶ Likely was Vit D deficiency (rickets)- Virchow assented; even T Huxley said not an ape to man link
- ▶ Likely was a modern man



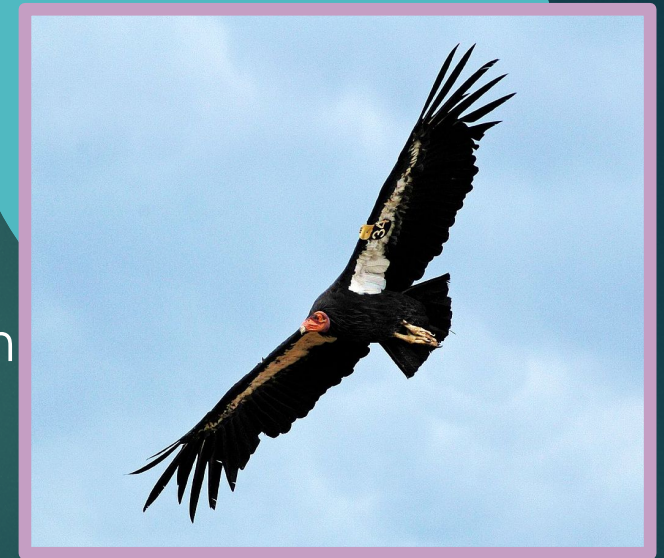
CroMagnon Man

- ▶ Homo sapiens; Paleolithic period, date given as up to 35K yrs
- ▶ Discovered in CroMagnon, SW France, 1868 by E Lartet
- ▶ **Overlap with Neanderthal**
- ▶ Robust, powerful, about 5' 6"; 1st w prominent chin, brain about 1600 cc (modern man about 1350); used tools; settled hunters; rock shelters; buried dead; cave painters

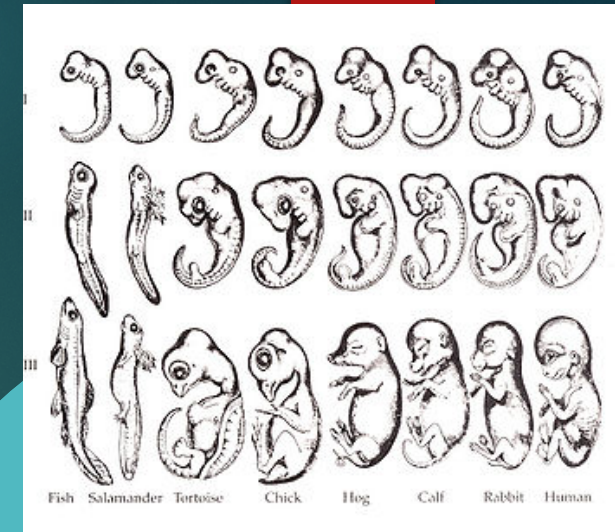


Some other problems for Evolution Theory

- ▶ Evolutionary ancestors **coexisting with modern humans**
 - ▶ *H. erectus* and *h. sapiens* (Java Solo-Ngandong Beds) skulls
- ▶ **Ideologic hypocrisies** - if extinction is key part of evolution, why worry about preserving species? (eg trees, certain birds, polar bears, etc)
 - ▶ Famous examples: dodo bird, ivory-billed woodpeckers, whooping crain, **California condor** (1987) – some need certain area size that was lost
 - ▶ Estimate 500 extinct species since settling N America
 - ▶ Currently 170 animal species “endangered”
- ▶ Hoaxes...



Hoaxes – “fake news”



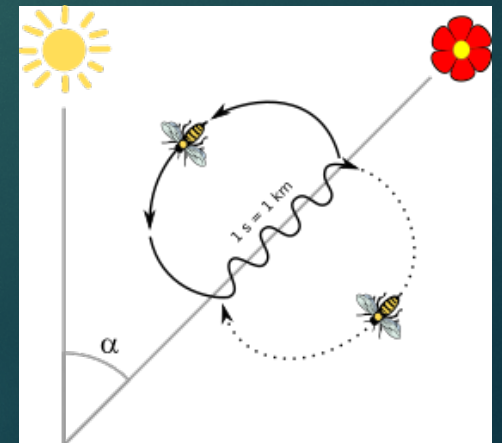
- ▶ Hairy tail on a child NEJM October 21, 1982; just a fleshy growth
- ▶ “Ontogeny recapitulates phylogeny”
 - ▶ Ernst Haeckel (1866)- fabricated to fit his theories (coined phylum term); was used by Mayr (Harvard, definitive book on Evolution, 2001) (Science 277(5331):1435); even Gould agreed (Nat History 109(2):42-9)
- ▶ Prehuman skeletons
 - ▶ Piltdown Man (UK)– Dawson (1912) proclaimed as “missing link”, claimed 500K yr ancestor; exposed as fraud 1953
 - ▶ Was altered orangutan mandible/teeth, small cranium modern man
 - ▶ Nebraska Man (Osborn, 1922); based on a tooth; retracted 1927 as mistake, not fraud
 - ▶ Java Man (Dubois, 1891); eventually admitted was skull cap of a gibbon
 - ▶ Peking Man (1921, 1947); all but a single tooth of claimed material has “disappeared” – prominent role in restructuring of Chinese identity after Chinese communist revolution



Sound familiar?

Language

- ▶ Only humans can speak
- ▶ Can other primates understand language?
 - ▶ Lana and Sarah (chimps) and **Koko** (Gorilla) cited as learning sign language (cf **Jane Goodall** studies of chimps)
- ▶ But consider “lower” beings:
 - ▶ Parrots (mimick)
 - ▶ Some birds (pigeons) duplicate symbolic language
 - ▶ Bees (signaling) – “waggle dance” to indicate locations of nectar, pollen, water, new nest sites
- ▶ Consider complexities of language
 - ▶ Vocabulary (nouns) is easier; but verbs, tenses, other figures of speech, paragraphs, punctuation; figurative, implied, metaphors, puns, word plays – much more complex



The written language

- ▶ Cave paintings, petrolyths:
 - ▶ oldest claimed to be 64K (Ur-Th dating), human hunting pigs in Sulawesi, Indonesia, 40K yrs; stencils? (many other claims)
- ▶ 1st written, Sumerian, about 5400 yrs
- ▶ Egyptian hieroglyphics about 5200 yrs
- ▶ **Coincidence that written language and history about 5000K yrs? ... ~ time of Tower of Babel**
- ▶ Some numbers about even language:
 - ▶ Random chance of 3 letter word (26^3) is 17K; 7 letter word 10^{-5} ; 25 letter sentence 10^{-100}
 - ▶ many languages have more than 26 letters (eg Thai ~80)
- ▶ No signs of language evolution; all are complete

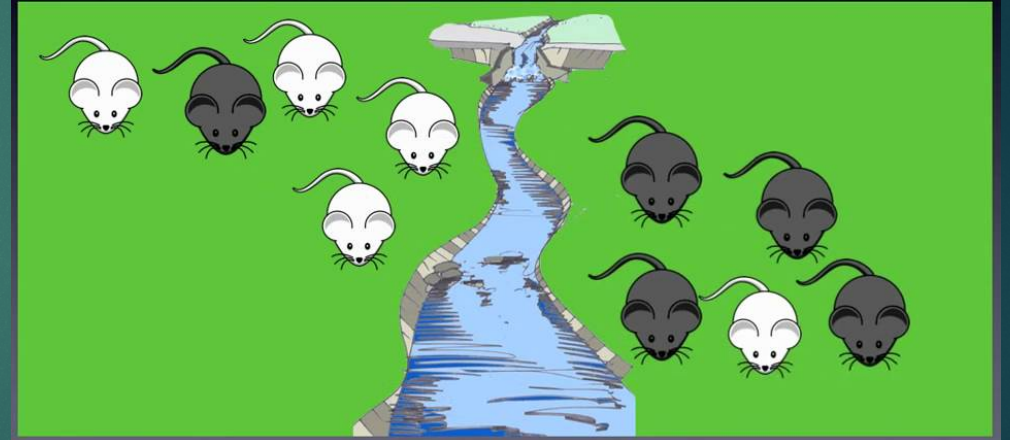


Races

- ▶ Not genetically differentiable
 - ▶ All same melanin; different potential to express
 - ▶ Asian and white eyelids have fat; Asians more
- ▶ Concept of a “cline”
 - ▶ Shows adaptations/variations by geographic area
 - ▶ Eg larger bodies in cold climates
 - ▶ Gene pool issues may explain races
- ▶ Wouldn't evolutionary position imply some races are “better” – ie racism?
 - ▶ Eg, Darwin described Tierra del Fuego indigents on his voyage – “closely resembled the devils...”
- ▶ Racism is simply sin.

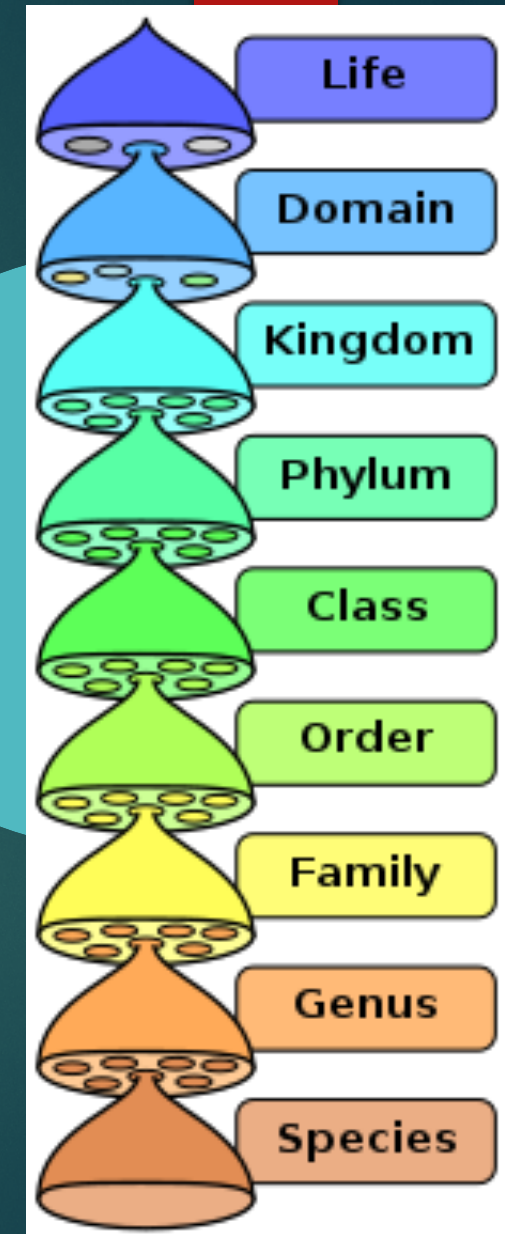
Founder Effect

- A reduction of genetic variation that happens when a small group of individuals starts a new population



Summary - Life to Man

- ▶ History and language seem to point to short time of about 6000yrs
- ▶ Population statistics – doesn't fit long time well
- ▶ Lack of transitional forms throughout
 - ▶ We should be drowning in bones/fossils
- ▶ Seeming inconsistencies in classifications
- ▶ Monumental changes at each stage
- ▶ Made up “theories” to explain rapid jumps
- ▶ Relatively short time of major changes
 - ▶ Cambrian explosion
 - ▶ Man from ape in “only” a million years



Evolution:

▶ The substance of fossils hoped for, the evidence of links not seen

▶ Duane Gish

▶ Cf Heb 11:1

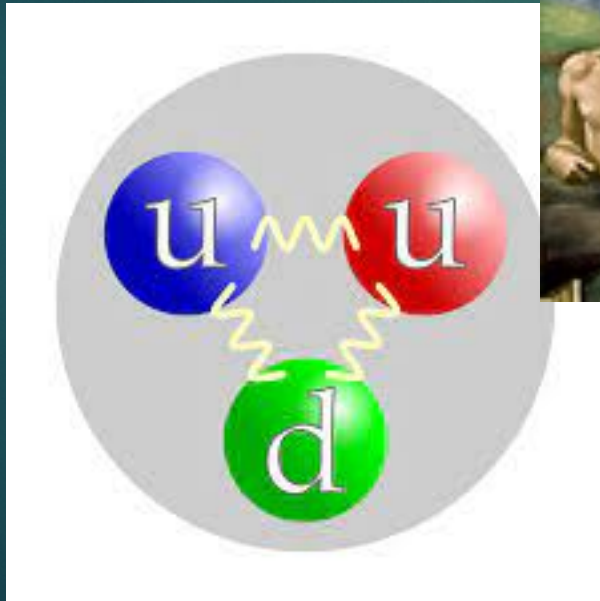


Dr. Duane Gish with ICR founder Dr. Henry Morris (seated)

Quarks to Quasars

Or Science for Creationists

VII. Other Creeping Things



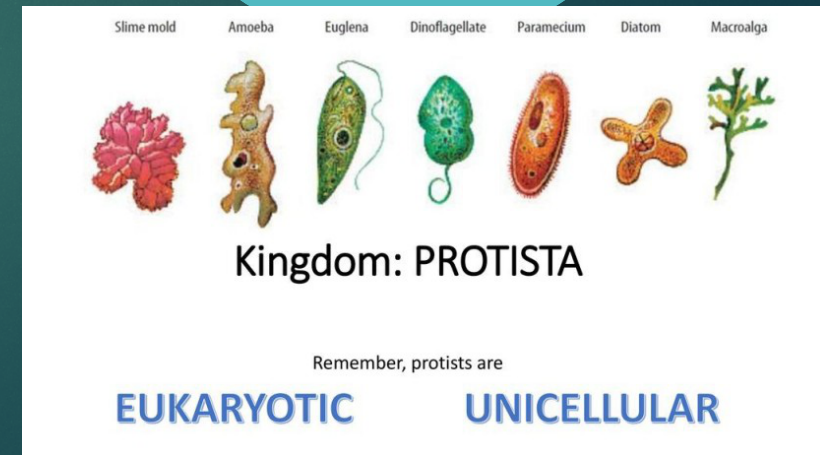
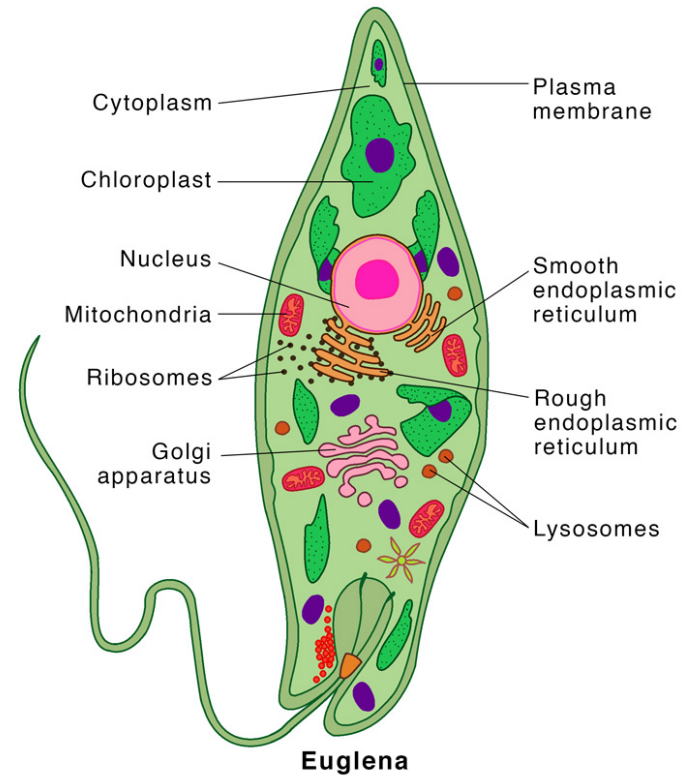
Outline/Review

- ▶ I. Introduction – importance, improbability, theory flaws
- ▶ II. Quarks and Atoms – atoms, quantum mechanics, BB/string theory (7 extra dimensions)
- ▶ III. Molecules and Cells – many complex systems but great order; impossible odds
- ▶ IV. Cells=Life – organelles, reproduction, abiogenesis
- ▶ V. Life to Man – population statistics, Journey to Man
- ▶ VI. Other creeping things
 - ▶ More examples of design (vs evolution)
 - ▶ Persistence of “lower” life
 - ▶ Complexity in “lower” life (?more than in man?)

Kingdom Protista – unicellular eukaryotes: protozoa, algae, slime molds

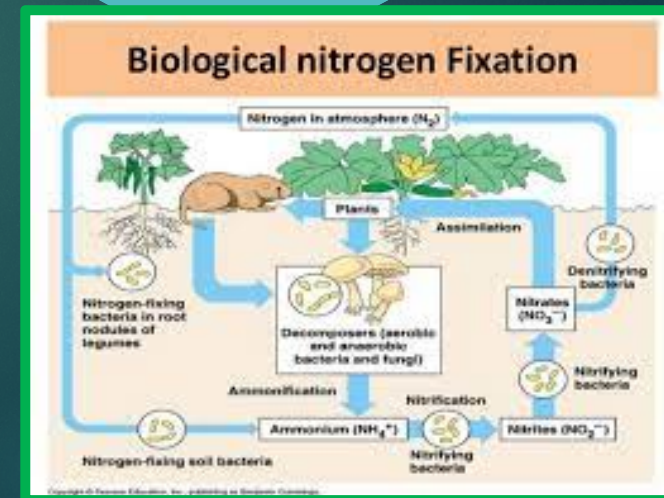
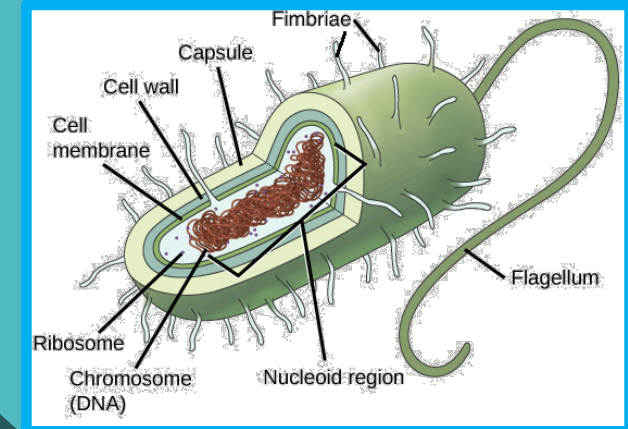
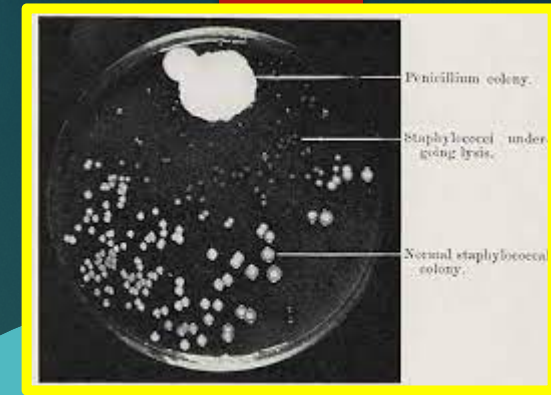
- ▶ Diatoms (phytoplankton): 25u diameter
- ▶ 80% of oceans' biomass (some in freshwater also);
- ▶ Basis of the marine food chain (100Mtons/yr) – photosynthesis; make 50% of earth's O₂ and significant C compounds (oil)
- ▶ 10K species
- ▶ Geometric shape, colors- like snowflakes – unique
- ▶ These are not “earlier drafts” but rather vital components in our world

Structure of a Protist Cell



Microorganisms – mostly helpful

- ▶ Fungi (their own Kingdom; distinct from Bacteria; eukaryotes; no fossil record)
 - ▶ Penicillin (**Fleming 1928**) – key early antibiotic
 - ▶ Saprophytic (and bacteria) – recycle dead stuff
- ▶ Bacteria (its own Kingdom; **prokaryote**; formerly Kingdom Monera) –
 - ▶ antibiotic resistance – is a LOSS of function or “uncovers” code that was not being expressed; almost all are not disease causing; balance; then selectivity of population
 - ▶ *V. cholera* is a pathogen, but a similar toxin by close species colonizes and serves to put squids in “stealth mode” but emitting what predators from below would misjudge as moonlight
 - ▶ By design: *S. aureus* – can exchange genes (resistance) to others rapidly (not by mutation)
 - ▶ **nitrogen fixation** - vital to plant and human life! Complex biochemistry
 - ▶ Normal flora keeps the balance of health
- ▶ **Yet all use sophisticated reproductive coding (ie DNA, RNA)**



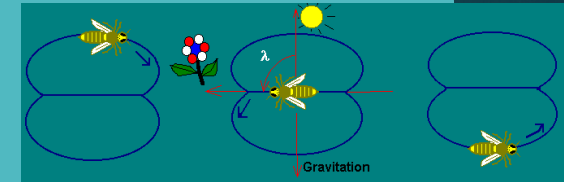
Insects – many advanced features

▶ Butterfly

- ▶ Have specialized ability to use **trapped air pockets in their wings to fly efficiently**
- ▶ Monarchs have **“taste” sensors on legs** to choose where to lay eggs; some migrate 3000 miles, over multiple generations since they only live 4 wks, but a “Methuselah generation” returns south



▶ Honeybees – have legendary **navigation skills** – mechanisms include airspeed, sunlight polarization detection, UV sensors to track tilt, compound eyes that keep image constant even in flight

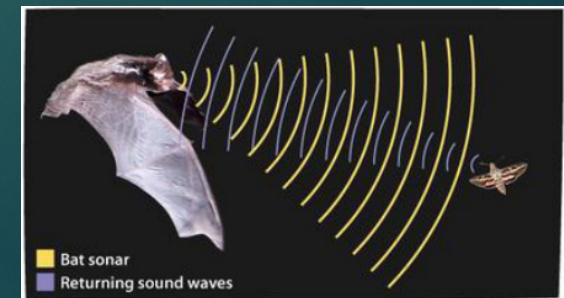


▶ 90% aquatic insects inhabit fresh water; pond skater – uses back legs to steer, middle legs to row

▶ **“hexapod gap”** – no insects from 385-325My; c/w Flood, land insects then eventually higher elevation/mobile/flying insects later

▶ Tiger moths can “jam” bat sonar by emitting rapid ultrasound clicks

▶ **Mosquitos** – **sense CO₂** (to find flower nectar) and **body heat** (to find body to bite)

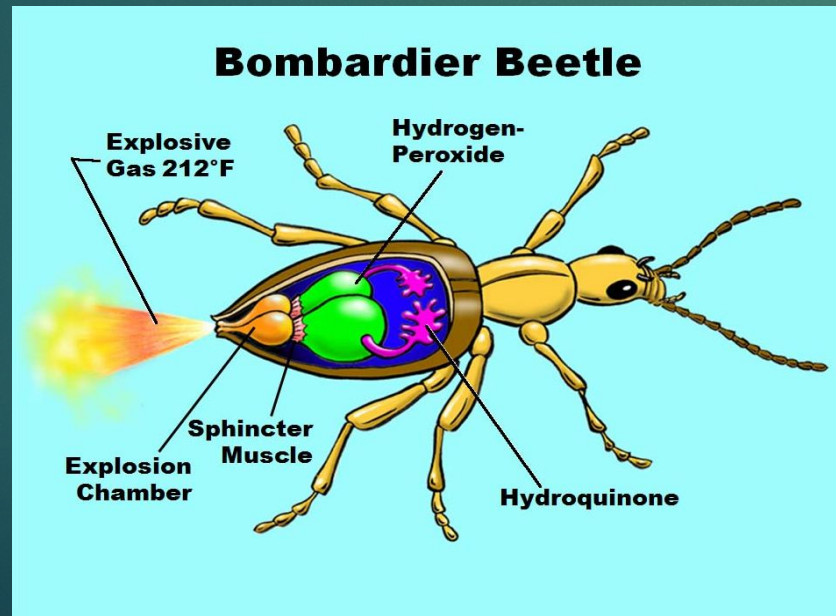


Bombardier beetle

- ▶ Kills its prey by mixing and shooting a hot, lethal mix of H_2O and hydroquinone with 2 catalysts
 - ▶ (Gish evidently wrong about “inhibitors”)
- ▶ Imaging errors in evolving this- would be lethal
- ▶ A “simple” bug with very complex system
- ▶ How produce, not hurt itself, aim?



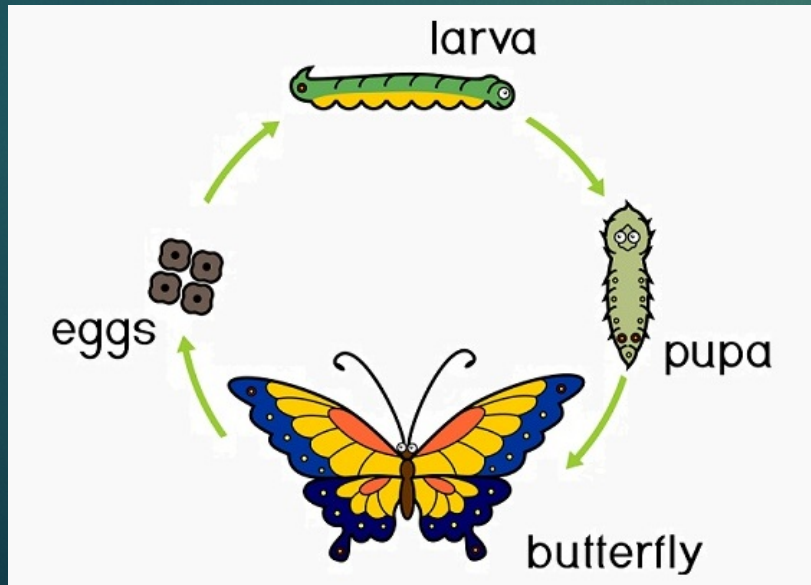
▶ <https://youtu.be/TgqF-ND2XcY>



<https://www.youtube.com/watch?v=BWwgLS5tK80>

Insect metamorphosis (eg butterfly)

- ▶ Necessary - no skeleton to support body; has exoskeleton only
- ▶ Incredibly complex interactions – biochemically and physically
- ▶ Some muscles actually are eliminated to keep wings during molt



Molting

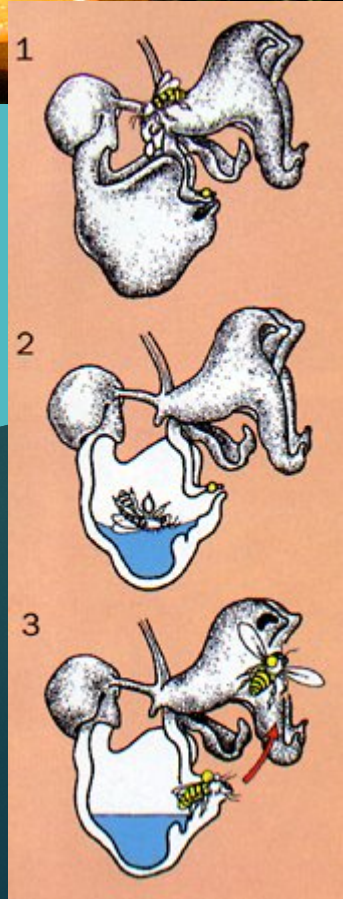
- ▶ Consider complexities of process – physically and chemically
- ▶ Had to be “right” from the start
 - ▶ eg - lobster



Codependence

Bucket orchids and bees

- ▶ Orchid fossils 100 My (coexisting with dinosaurs)
- ▶ Bee attracted by a fragrant fluid, not nectar
 - ▶ lands in bucket, accumulates some chemicals on its hairs, and only exit is a narrow spout that has knobs the bee can step on to climb out, but not before the flower applies some glue (from its viscidium) that the pollen sticks to (takes 45 mins!)
- ▶ One could not have developed without the other, and fully equipped at that.



Grasshoppers



- ▶ Like any other insect, have 6 legs
 - ▶ But, Lev 11:20-24 – describes locust creeping on “all fours” (sometimes used to show inaccuracy of Bible)
 - ▶ The grasshopper raises his “jumping” hind legs while walking! (v21 “legs above their feet to leap”)
- ▶ They can use their legs to catapult themselves with great bursts of energy, to leap
 - ▶ (context – OK to eat grasshoppers)

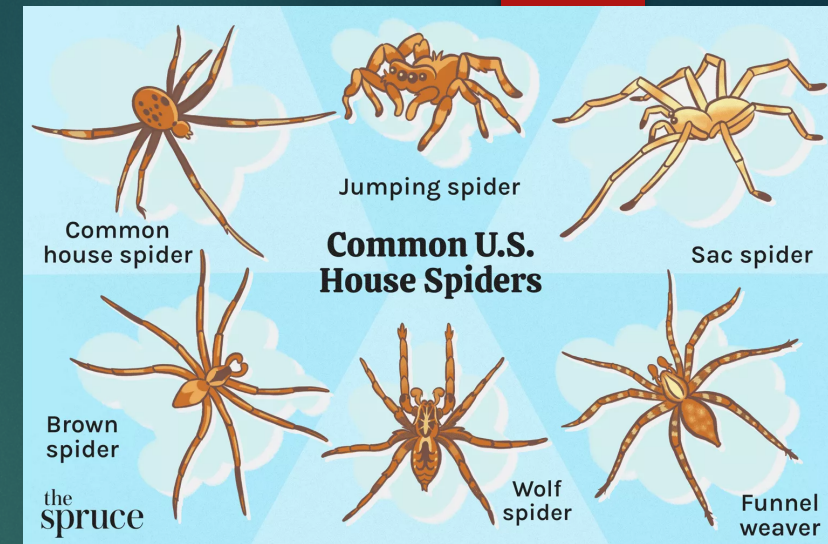
Peppered Moths – a key evolutionist “example”

- ▶ Dark colored moths were rare
- ▶ 1848 Manchester, an industrial city, reportedly drastically increased
- ▶ 1896 JW Tutt presents as eg of natural selection (dark moths now better to survive since previously light-colored trees darkened by coal in Industrial Revolution)
- ▶ B Kettlewell investigated 1953-56 “confirming”; books carry this
- ▶ But, D Sargent in late 1960s critical; Hooper, *Of Moths and Men* (2002) says **fraud**; C Clarke studied-
 - ▶ Dead moths were glued on trees
 - ▶ Moths do not hang out on trees during day
 - ▶ Eaten moths are languid ones already (lab based)
 - ▶ Indeed 4x as many dark as light in unpolluted forests
 - ▶ Agreed by evolutionist U Chi J Coyne
- ▶ **CONCLUSION: just a shift (back and forth)**



Spiders – arachnidids (not insects)

- ▶ Arthropods – 8 legs (different class from Insecta)
- ▶ Tiny, miniature spiders have same size neurons (2um diameter), but fewer, yet their webs are just as precise as larger spiders
 - ▶ Eberhard W. Proc Royal Soc B. 274(1622); 2203-10, 7 Sept 2007
- ▶ Spider silk is stronger than Kevlar; 100x stronger than steel- if size of garden hose, could support 2 737s; also can stretch 40%; complex nanofibrils aligned parallel or spiral; spiders eat their own web when done
- ▶ Utilize a complex algorithm to spin the web

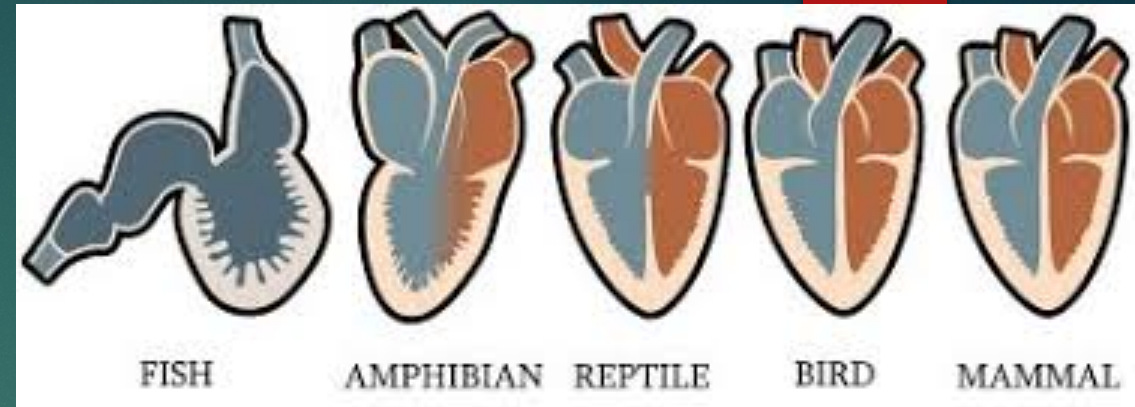


Fish – design features, examples

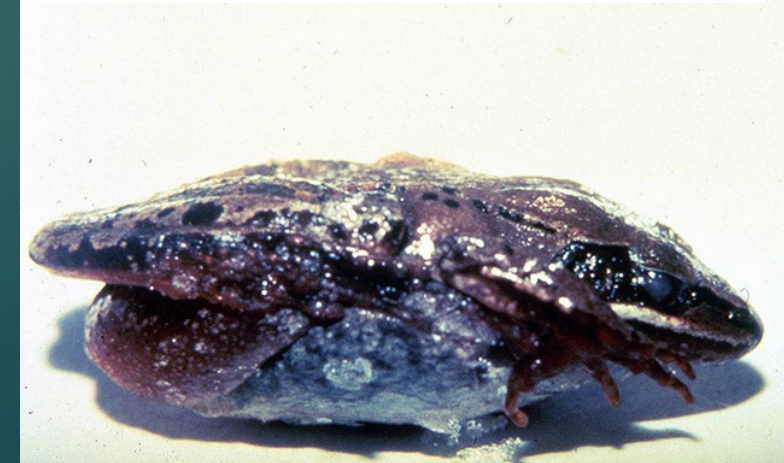
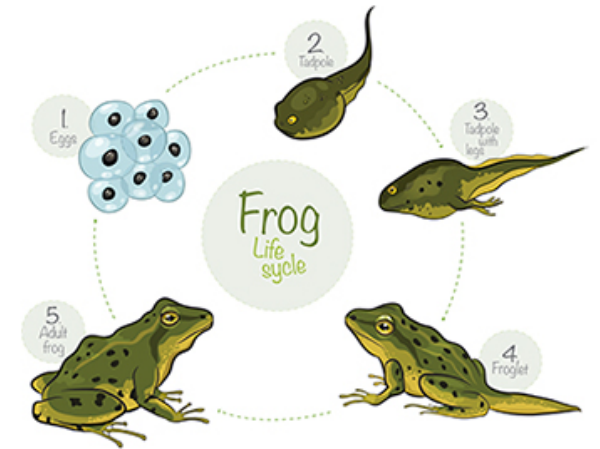
- ▶ Extract oxygen from water; how could that happen piecemeal?
- ▶ **Water freezes and floats**, so bottoms of lakes, etc survive
- ▶ Some unique specifics:
 - ▶ Salmon – **migratory patterns**; return to hatching location
 - ▶ Sharks – only cartilage
 - ▶ Lungfish – touted as “living fossils” (no change x100My) but they are **not primitive**
 - ▶ 5 eye color pigments; why would slow moving, primitive fish need >Technicolor?
 - ▶ Archer fish – shoots down insects by squirting stream of water from under water within 0.1s to hit an insect
 - ▶ Blind fish



Amphibians – design

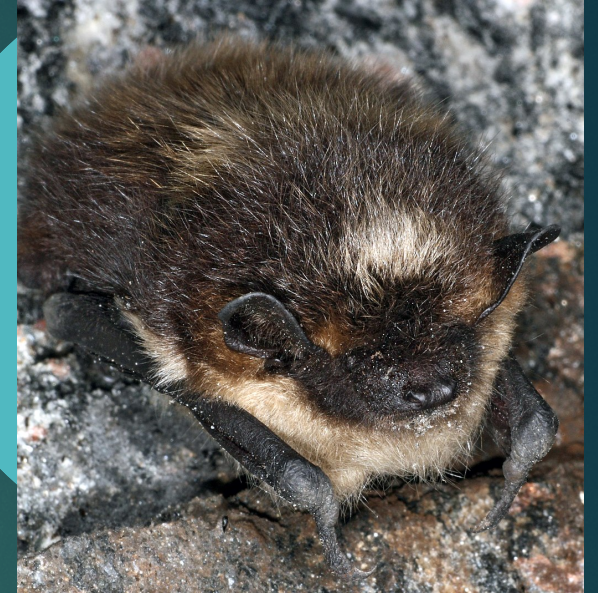


- ▶ Leeches: (Amphibians) have 32 brains, 10 stomachs!
- ▶ Cuttlefish, squid, octopuses – have 3 hearts!
- ▶ Frogs - consider egg to tadpole to frog; all had to be intact to work
- ▶ **Amphibian development of heart chambers** (2-1-2-4 humans) – 1-2-4 in “lower”
- ▶ Arctic (wood) frog – can be **almost completely frozen**; has innate antifreeze
- ▶ One frog species (Rheo. Silius) swallows fertilized eggs, stops eating, eggs resist the HCl acid in stomach; born through mouth in 6 wks



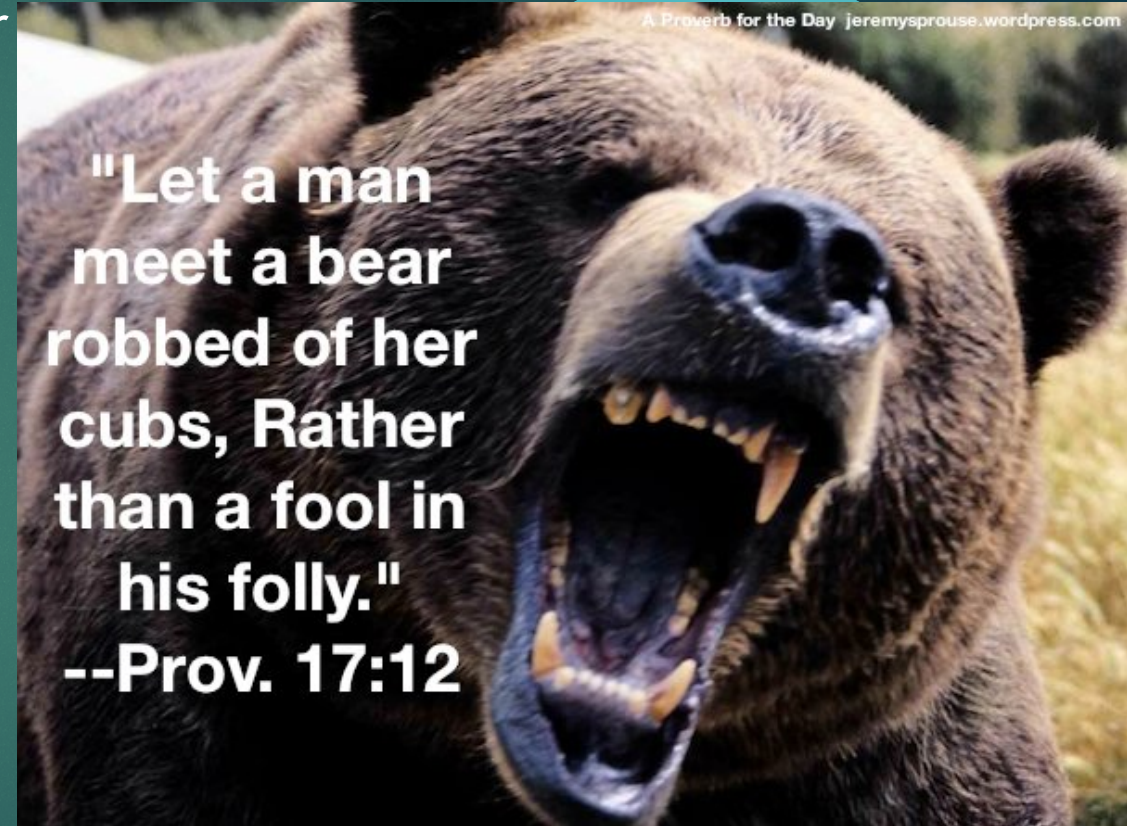
Hibernation and the like – all had to be just right from start or else extinction

- ▶ Hibernation: body temp, mechanisms slow down (“deep”= true)
 - ▶ Eg birds, shrews, woodchucks, rodents, bats
 - ▶ Live off “brown fat” – special protein; liberates heat as it is metabolized (without shivering)
 - ▶ Periodic arousal every 2 wks
- ▶ Bears- suppress metabolism, not body temp; not true (“light”) hibernation
- ▶ Brumation – turtles/reptiles – a temporary dormancy; do not regulate body temp (tree lizards)
- ▶ Diapause – insects (potato beetles, flesh flies, monarch butterflies), a type of dormancy
- ▶ How can this be anything but design; if deficient, extinct!



Prov 17:12 bear robbed of welts

- ▶ Study in mice – nitric oxide (NO) major role to control of maternal aggression
- ▶ Solomon Snyder (JHU) – vital portion of a gene; tested in “knock out mice” (J of Neuroscience, Sept 15 1999)
 - ▶ lacking males -much more aggressive;
 - ▶ females – no difference, **unless** mothers! Then aggressive like males
 - ▶ Surge of NO in paraventricular nucleus in females (not males) with maternal stress; also plays role in lactation



Camouflage

- ▶ Deer, fawn
- ▶ Leopard
- ▶ Leaf insect, stick insect
- ▶ Artic fox, bear
- ▶ Octopus
- ▶ Birds, lizards



Other animals – interactions like symbiosis, etc.

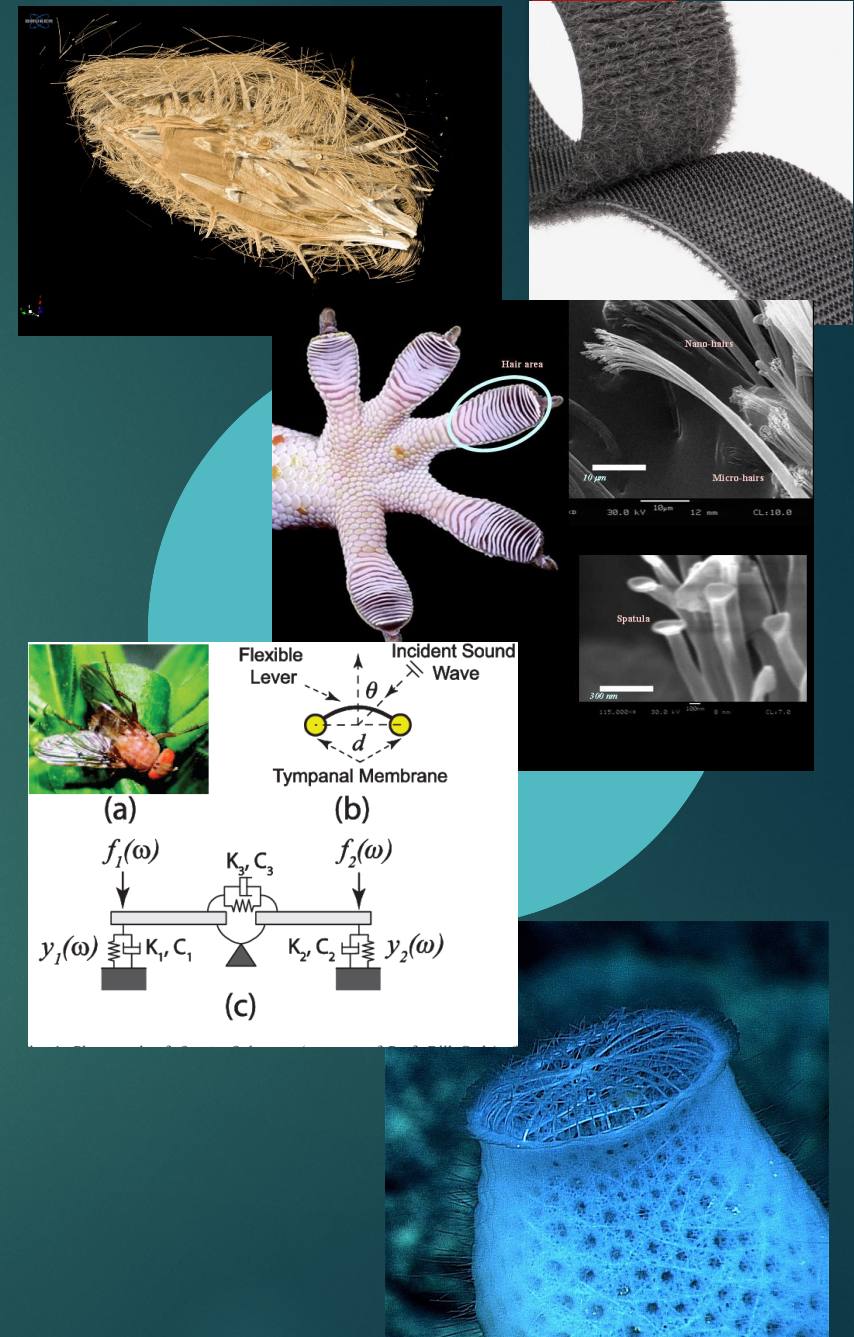
▶ Corals

- ▶ Symbiotic with plants
- ▶ Capture food from water by sweeping tiny tenacle-like arms
- ▶ 10K genes (cf man with 20K)
- ▶ Found growing on a shoe (1992, Philippines), 4 yrs old (should have taken much longer);
 - ▶ Another 118 yrs old in Australia



Mimicking design (bioinspiration/ biomimetics)

- ▶ Oscar Wilde (Irish poet and playwright, 1854-1900, *The Picture of Dorian Gray*) – “Imitation is the sincerest form of flattery that mediocrity can pay to greatness”
- ▶ Velcro inspired by a burr; de Mestral (1941)
- ▶ Van der Waals forces (gecko paws)- window stickers
- ▶ Fly (*Ormia ochracea*) – ears only .5 mm apart (1.5 microsec) would make hearing localization difficult; special mechanism to 40x that using a flexible lever on eardrum, and nerves have a coding system; can sense directions as well as humans; **incorporated in hearing aids for man** (connected TMs)
- ▶ Wright brothers – flexing of bird wings
- ▶ Sponges lattice – inspiring better building support design
 - ▶ Purportedly so ancient, but complex – structure (struts, grids), but also their glass-like design allows sunlight to travel like fiberoptics to nourish



Dragons and Serpents

- ▶ Bible often ridiculed for this (Job)
- ▶ Widely described in extrabiblical texts
- ▶ Some alive today
- ▶ More impressive ones could be extinct
- ▶ Fits well with dinosaurs
- ▶ Bible translates several “monster” words differently
 - ▶ Tanniynim (dragons in 20 passages, whales (Gen 1:21))
 - ▶ Leviathan (sea dragon) (Psa 74:14;104:26)
 - ▶ Fire breathing monster (Job 41:21)
 - ▶ Behemoth (Job 40:15-24)
 - ▶ Jackal (Isa 34:13;Mic 1:8;Mal 1:3)



Komodo dragon



Dinosaurs

- ▶ Previously called “dragons”; “dinosaur” not coined until 1841
- ▶ Vegetarian
- ▶ many mammals seen along side these reptiles (birds)



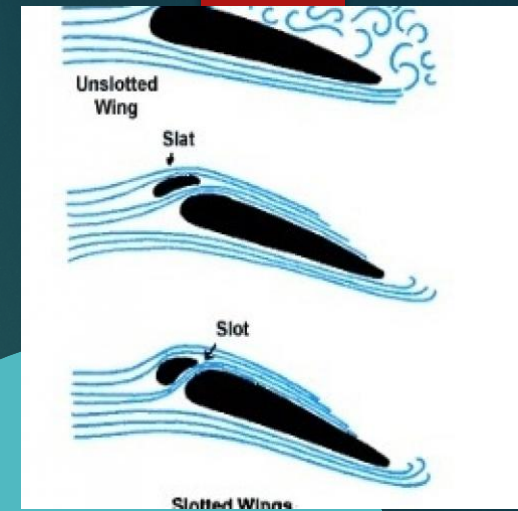
Birds

- ▶ Perfect designs for flight

- ▶ Hollow bones
- ▶ Breathing at high altitude; flow through lungs (more in a bit)
- ▶ Sea birds can drink salt water – salt glands (nasal or supraorbital) allow very concentrated excretion of salt (discovered 1957 in cormorants) in part by vigorous shaking/sneezing

- ▶ Flight

- ▶ Dogma: reptile scales to bird feathers, but feathers have pores, other skeletal structures not c/w reptile as precursor
- ▶ Feathers perfectly adapted to change shape, dynamics
 - ▶ Handley Page slot: bird feathers help reduce turbulence; airplane wings incorporate this



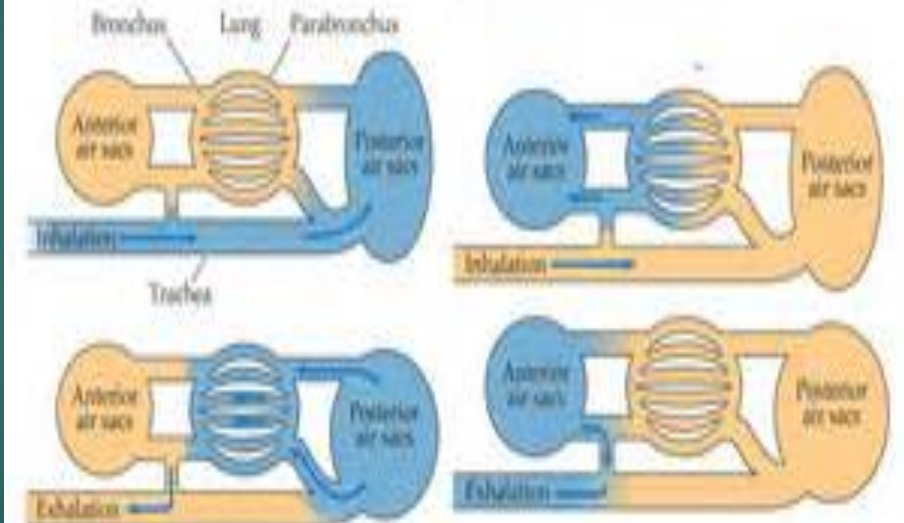
High altitude birds flying

- ▶ Although 21% O₂, at >15K' the pressure becomes too low, so exchange in alveoli compromised
 - ▶ Pressure at 32K' only 0.25 atmospheres
- ▶ Some birds can migrate/fly up to 36K' altitude for vultures
- ▶ Bird lungs: flow through principle – air enters posterior air sacs, but is forced back through anterior sacs upon exhale, forces more O₂ to exchange w capillaries.
 - ▶ It would take a major change to start bidirectional breathing (like man); hard to imagine “stepwise”

BIRD LUNGS: VENTILATION

Passage of air through lungs:

in trachea → rear air sacs → rear bronchi → parabronchi in lungs
out trachea ← front air sacs ← front bronchi



How did flight evolve (multiple times)?

- ▶ Need lift as air passes
- ▶ Birds
- ▶ Mammals
 - ▶ Bat - mutated from land rodent? (50 my ago); no int forms- earliest seemed to fly
 - ▶ 25% of the 1240 living mammal species; other source 21% of 6495
 - ▶ Only mammal that can fly ("flying squirrels" really just glide); flaps only digits, not whole arm/wings
 - ▶ Requires intricate engineering features to change shape in short time to maintain flight;echolocation (and sight)
 - ▶ 1" to 5'; eat insects (saves farmers \$1B/year, plant forests dropping seeds; mean lifespan 20 yrs; 3 are blood-drinking!; true hibernators (brown fat)
 - ▶ wings are anchored to forelimb/body, but also hind limb!
 - ▶ Other mammals "lose" embryonic webbing (apoptosis); BMP protein in bats is resistant to apoptosis-inducing molecules (Fgf8 and Gremlin)
- ▶ Frogs/snakes – really gliding
- ▶ Insects

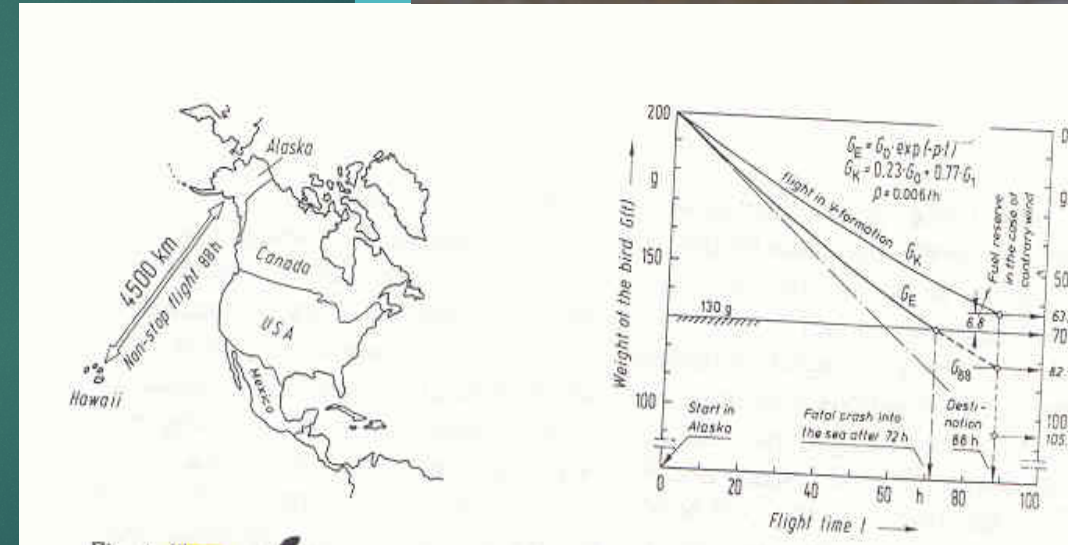


How could it evolve stepwise, multiple times; was it ground up or tree down?

Golden Plover - Supernatural des



- ▶ Migrates from AK to HI (2500 mi) (250K wing beats!)
- ▶ 88 hours; no refueling over ocean
 - ▶ Optimizes cruising speed
 - ▶ Navigates, never been there on 1st
- ▶ Starts at 7 ounces, 2.5 are fat
 - ▶ Converts 0.6%/hr
 - ▶ Would call for using 3 oz fat, and being less than which is required to fly
 - ▶ Solution: V formation, saves fuel collectively, “drafting”; saves 23% of its energy
- ▶ Short-tailed Shearwater goes AK to Australia – 8K mi!



Heb 10:25 - Not forsaking the assembling of ourselves together, as the manner of some is; but exhorting one another: and so much the more, as ye see the day approaching.

Consider birds from dinos (reptiles)

- ▶ cold to warm blooded
- ▶ Hipbone differences
- ▶ Pneumatic/hollow vs solid bone
- ▶ Avian respiratory system (flow through) vs diaphragm to inhale/exhale
- ▶ Birds 4-chamber heart; reptiles 3-chambers
- ▶ Feather design and control of feathers vs no control of scales (purported precursor to feathers)
- ▶ Leg construction (like walking on tip toes)
- ▶ T rex brain (from endocast) more like reptile than bird shape
- ▶ BTW: marine fossils found w Dinos
 - ▶ Discovered in SD, Hell Creek Formation, 2019
 - ▶ Does not fit evolution chronology/strata theory



Image Credit: Copyright © 2011 R. G. Northcutt. Adapted for use in accordance with federal copyright (fair use doctrine) law. Usage by ICR does not imply endorsement of copyright holder.

Why did human evolution miss these useful features?

- ▶ Most birds can swivel their head more than humans
- ▶ Eagle eyesight better



Consider complexities of eggs

- ▶ Birds (hard shell), reptiles (softer, leathery), fish (some no eggs, egg layers - no shell), amphibians (in water, no shell)
 - ▶ Have to be protected from elements/predators
 - ▶ Proper nutrients
 - ▶ Allow baby out; timing, etc



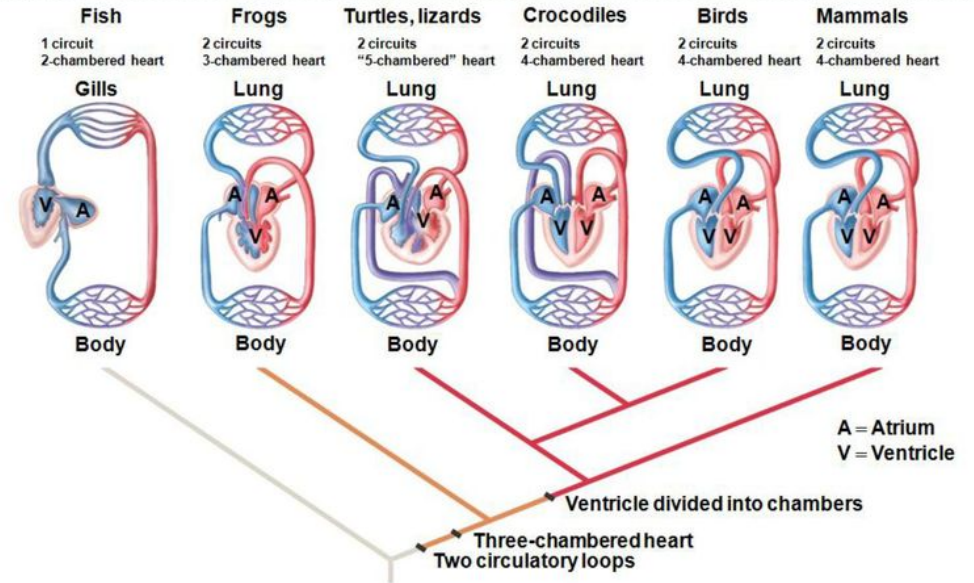
Amphibians to Reptiles

- ▶ Amniotic egg in Reptiles- HUGE changes had to occur (once)
 - ▶ Impervious shell, gelatinous egg white, secreted water, excretion of N waste as (insoluble) uric acid for embryo to float in, amniotic membrane (for allantois in hind gut for waste (and later respiratory out of shell, yolk to supply needs, urogenital system fertilization before hardening of shell
- ▶ Amphibian:
 - ▶ breed, fertilize, hatch in water and metamorphose (frog); Reptiles: on land
 - ▶ smooth skin; Reptiles: scales
- ▶ Heart and aortic arches remodeled

▶ **MAJOR transitions; no intermediate, no room for errors**



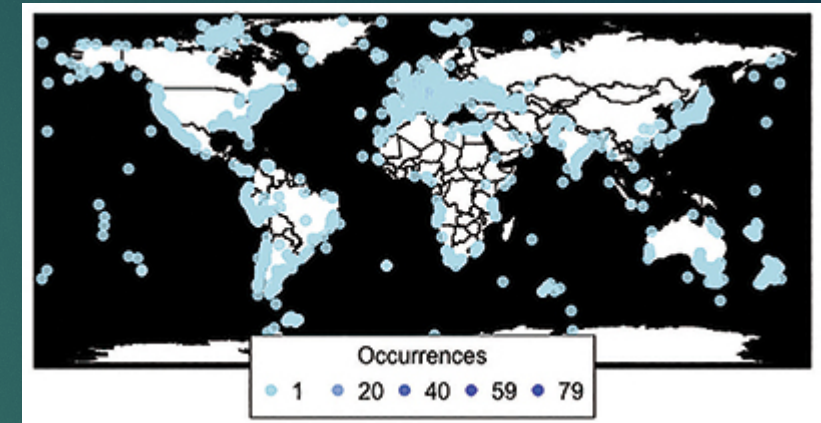
Comparative Anatomy of Vertebrate Hearts



CLAWS	Has claws	Lack claws
BREEDING	Breeds on land	Breeds on water
ORDERS	Crocodylia, Squamata, Testudines, Sphenodontia.	Anura, Urodela, Apoda.
EXAMPLES	Crocodiles, snakes, lizards, and turtles.	Frogs and toads, salamanders and caecilians.

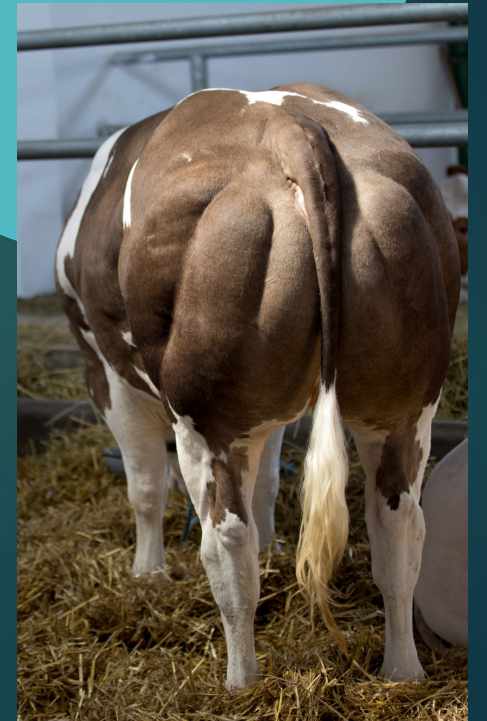
Fossils found in unexplained places

- ▶ Whale fossils have been found across Europe in land areas, not just coastal area
- ▶ Coal found under oceans – fits more with Flood than uniformitarianism



Mutations that represent uncovering or unregulating rather than new

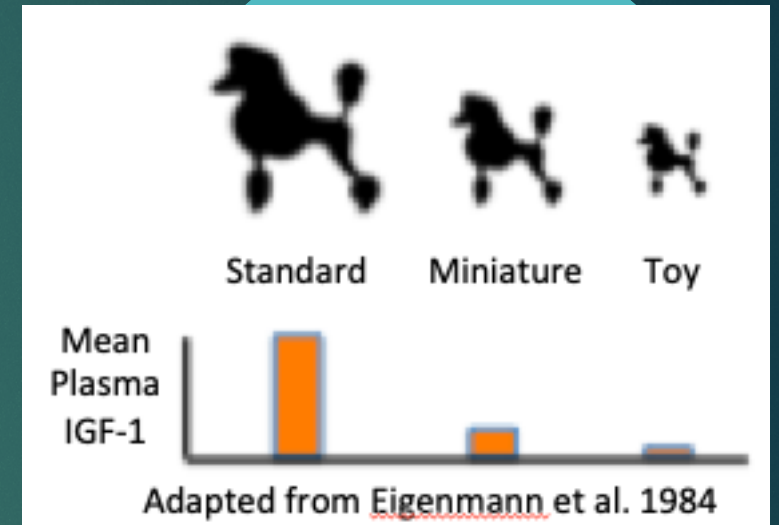
- ▶ "super baby" – 4yo German that has twice muscle mass; mother was a sprinter; siblings are strong;
 - ▶ represents a loss of a regulator gene, for GDF-8 a factor that controls muscle growth (a copying mistake, deletion of DNA) (NEJM 350(26):2682, 26Jun 2004)
 - ▶ *not evidence of evolution to a master race.*
- ▶ Similar to Belgian Blue cattle that are muscular due to a mutation that doubles myostatin production, allowing more muscular (Creation 20(4):9, 1998)
- ▶ Similarly found in mice (Science News 152(21):325 22Nov 1997)



Small dogs are mutants, but all are of the same “kinds”

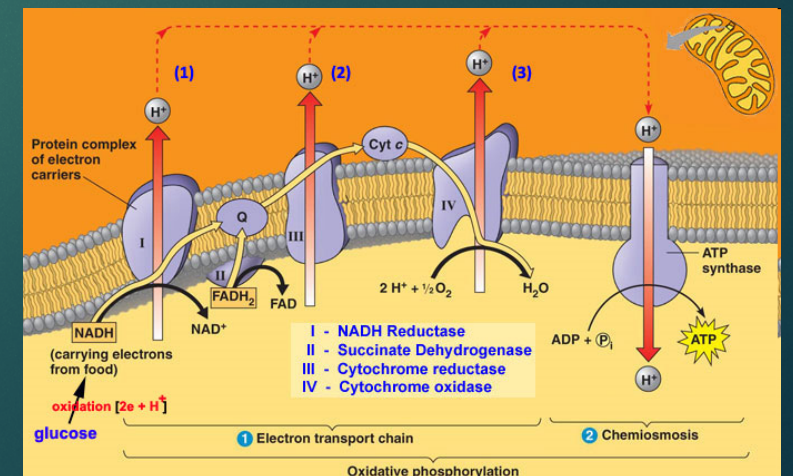
- ▶ Chihuahuas, terriers, Pekinese, etc all have a mutation that affects IGF1 gene loss of growth regulation compared to large breeds like St. Bernards, Irish wolfhounds, Great danes, etc

- ▶ Science 316(5821):112, 6Apr 2007
- ▶ New Scientist 194(2599):19, 14April 2007



Living fossils – a problem because they were supposed to be steppingstones, now gone, served their purpose

- ▶ Coelacanth
 - ▶ Huntsman Spider
 - ▶ Horseshoe crabs (*limulus polyphemus*)
 - ▶ Shrimp-like Crustacean (*neoglyphea neocaledonica*),
 - ▶ Laonastes Aenigmamus – a mouse-like survivor (Laos market)
 - ▶ MANY others
- ▶ Stasis – same thing – many examples of organisms that are unchanged from “millions of yrs ago”
- ▶ Cytochrome c in “lower” beings

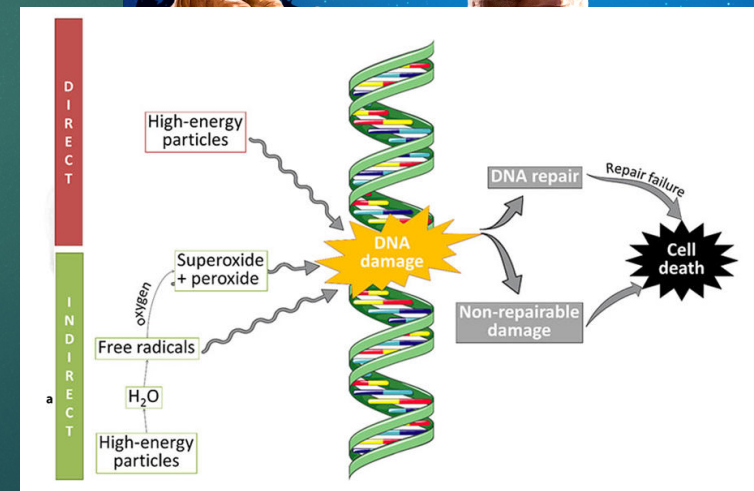
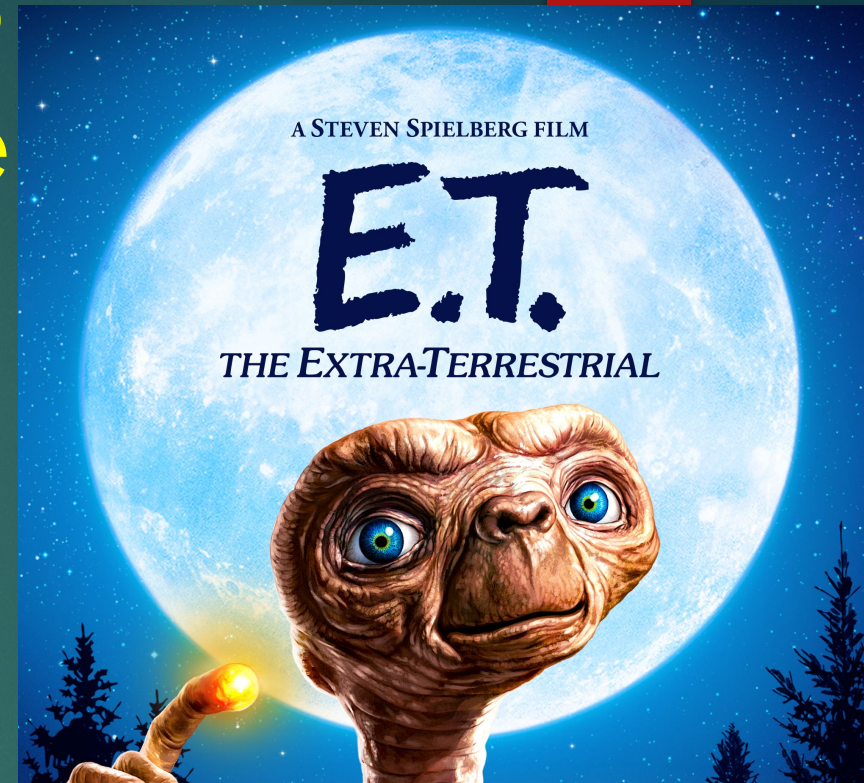


Some theorize life came to Earth from somewhere else

- ▶ Still, to be consistent, it would have had to evolve there first...
- ▶ Evidence against life from elsewhere

- ▶ Escape velocity
- ▶ So far away
- ▶ Radiation would destroy DNA

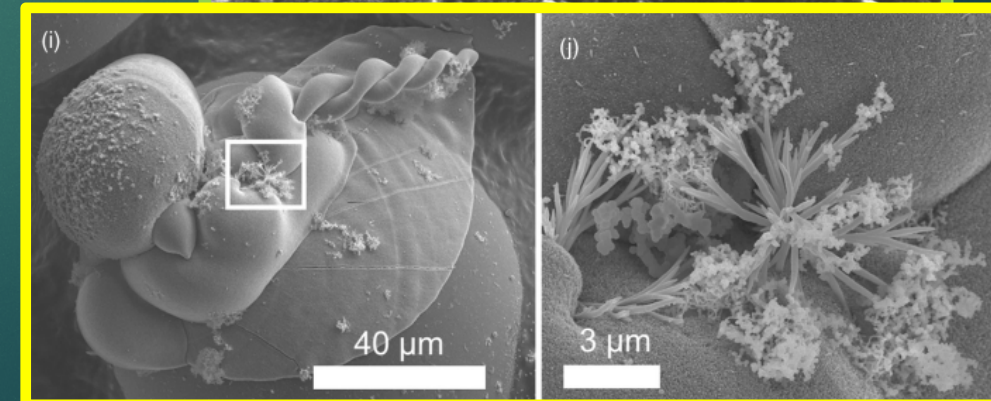
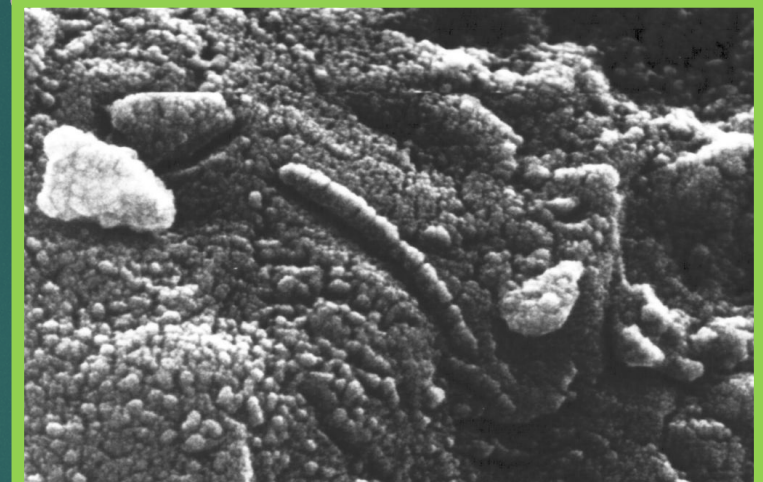
$$v_1 = \sqrt{\frac{2GM_p}{R}}$$



Life on Mars?



- ▶ Martian meteorite ALH84001 purported to have remnants of life
 - ▶ Discovered Antarctica 1984
- ▶ 1996 claims of microscopic **bacterial fossils**
 - ▶ Allowed that could be from inorganic polycyclic aromatic hydrocarbons
- ▶ has been show to be reproduceable by **natural, inorganic means**; synthetic rock heated to 200°C and reproduced; such heat could be from atmosphere entry
- ▶ Asimov was proponent
 - ▶ “discovery of life on one other planet (can) transform the origin of life from a miracle to a statistic” (quoting Morrison of MIT in Asimov's *Intelligent Life in the Universe*)
 - ▶ canals on Mars, not water; *Pioneer 10* experiments (no life)



Search for ExtraTerrestrial Intelligence (SETI)

- ▶ Substantial funding with radio telescopes to "listen" for distant radio signals under F Drake (started 1960 as Project OZMA)
- ▶ Was criticized and basically defunded amid criticism from NASA, 1996; some private funding sustained it
- ▶ Can scan 28M frequencies per second
- ▶ NASA restarted funding it amid "discovery" that might be traces of Martian life in a frozen rock in Antarctica (about \$10M, maybe not currently?)
 - ▶ Likely a "marketing" ploy by NASA for more overall funding (its "fourth goal" to look for ET)
- ▶ Now 100 scientists in main center No CA, the Sagan Center
- ▶ Still waiting for the calls to be picked up...



Creeping Things Summary

- ▶ Many advanced mechanisms in “simple life”
 - ▶ And simple life persists - and is vital!
- ▶ No evidence of step by step development
- ▶ challenge mathematical and logical intuition
 - ▶ **Interdependent systems** needed to be intact
- ▶ Fossils in illogical locations; with “newer” things
- ▶ Mimicry of God’s **designs** is rampant