

Lecture 3: 11 Sept 2018

Janet

- Victorians, British, 19th Century all equal
- *Immutability of species* : prior belief that species were created by a divine force, immutable meaning they can't change and they are fixed, so then they can be classified. Created in the shape the most perfect for their role in life. Perfect design.
- 18th Century: Enlightenment (Reason and Rationality) when science changed shape in society

1. Taking Creation Seriously

- (a) Science overcoming religious prejudice (simple version)
- (b) Species don't change, they are fixed
- (c) length of time since creation is relatively short (shorter than process of evolution)
- (d) Aristotle: believed in design of humans, animals, plants. The form was closely allied to it's function
- (e) Christian tradition: Darwin etc more familiar with Creation. Hebraic, Christian (Old Testament)
- (f) God creating mankind, Michaelangelo, Sistine Chapel (1508-12) God infusing life into man
- (g) Science in the service of religion: set out to find design in the natural world. Must be stable, can't be changing
- (h) Special Creation: 16th, 17th, early 18th century. John Ray interested in plants, classify and investigate the comparative anatomy to find God's plan. Taxonomy
- (i) Giovanni Borelli (1608-1679): studied humans, machine made by God to do job perfectly
- (j) Carl Linnaeus: believed in God's plans. Thought of himself as the second Adam in naming and classifying organisms. Wanted to recreate the Garden of Eden. Called his students Apostles, Travelled everywhere. Classification scheme
 - i. Animal, plant, mineral
 - ii. Humans = anthropomorpho

2. Reason and Rationality pushed through

- (a) James Cook: British captain, measure the transit of Venus. 1768-71, 1772-75, 1776-79. Found Australia. Joseph Banks went with James Cook, found Kangaroo which did not meet the classification scheme, baby in pouch. More questions emerged.

- (b) Charles Willson Peale: natural history museum in Philly 1786
 - (c) Bible should be studied as a metaphor and historical source, not a literal account of the world.
3. Enlightenment Movement: Human Society could change and progress
- (a) France (1720-1800): philosophers called themselves "Enlightened". Distrusted taxation, marriage. Forward-thinking, progressive. Challenged idea of perfect adaptation. Thomas Paine ('Common Sense') Adam Smith, Mary Wollstonecraft, etc. Big Deal - produced the *Encyclopedia* arts, sciences to show how society was progressing.
 - (b) George Leclerc, Buffon: Director of Museum of Natural History. Encyclopedia of natural world. Critical of Linnaeus. Species are not fixed in characteristics. Animals and plants could change from moment of origination and that they have done so. Directionalist, believed in the advance in animals. Not like the evolution as we know it now.
4. Industrial Revolution (First): Transport via canals, improved manufacturing, construction (iron)
- (a) Lunar Society: Technocrats. very wealthy. Josiah Wedgewood (Darwin's grandfather, China magnate and factory owner). Perfect adaptation was not always perfect.
 - (b) Started thinking of another explanation. Emerged out of matter? Self-generated into various organisms? Humans too? Evolution surfaces. Erasmus Darwin (Darwin's grandfather, Physician wrote medical books and poems with ideas of evolution)
 - (c) Poem on human political progress and also discusses evolution. *Zoonomia* or the *Laws of Organic Life* (1794-96)
 - (d) Mary Shelley: in preface, was Dr. Erasmus Darwin's work that was being discussed, when she thought of story of *Frankenstein*
 - (e) Jean Baptiste Lamarck: evolution - species were neither divine nor fixed for Lamarck. Student of Buffon's. Arose from internal movement, from tiny alive organic matter. Progressive scheme. Orgs arose spontaneously from organic matter. Worms to insects or molluscs. Molluscs to reptiles, etc. Put them in a tree. Lamarck was first to propose that Orangutans could become humans. Enormously influential. Giraffes need longer necks. Inheritance of acquired characteristics. Mechanism for how this change could take place. Removed natural world from Perfect adaptation.
 - (f) Lamarck: Question the immutability of species, provided a mechanism whereby adaptation arose, and also to explain difference between fossils. Did Lamarck also believe that individuals could adapt genes during life?
 - (g) Storming of Bastille: released everyone from prison that education, law, votes needed to be reconstituted. Theories of evolution came at time of political unrest. Revolution in France.

- (h) Britain: revolution frightened people. 1810s searched for stability and wanted to go back to God's divine creation. Go back to emphasizing God's plan. Backlash. Social and intellectual pushback.
- (i) William Paley: Church of England. Argued that God designed the world. Evidence in all organisms. Industrial revolution taught us that all things designed must have a designer.
- (j) Malthus: Natural theology