

Keywords 2

<p>Fossil Record</p>	<ul style="list-style-type: none"> - fossil record, history of life as documented by fossils, the remains or imprints of the organisms from earlier geological periods preserved in sedimentary rock. • fossil record incomplete since seems to be missing some intermediate species
<p>Germ Theory</p>	<ul style="list-style-type: none"> - proposed by Pasteur whose research in the 1860s - Germ theory states that many diseases are caused by the presence and actions of specific <i>micro-organisms</i> within the body - basis of theory: there is some sort of germ or nucleus that has significant importance
<p>Homology</p>	<ul style="list-style-type: none"> - Similar characteristics due to relatedness (is any similarity between characters that is due to their shared ancestry) - can be revealed by comparing the anatomies of different living things, looking at cellular similarities and differences, studying embryological development, and studying vestigial structures within individual organisms - ex: forelimbs of tetrapods: Frogs, birds, rabbits and lizards all have different forelimbs, reflecting their different lifestyles. But those different forelimbs all share the same set of bones - the humerus, the radius, and the ulna. These are the same bones seen in fossils of the extinct transitional animal, <i>Eusthenopteron</i>, which demonstrates their common ancestry
<p>Homoplasy</p>	<ul style="list-style-type: none"> - organisms with similar appearance but not necessarily same ancestry (occurs when characters are similar, but are not derived from a common ancestor) - often results from convergent theory - ex.: any organism that moves into aquatic space, ends up with a torpedo body so they can move through a viscous environment but just because they all have a similar body shape does not mean they are related ancestrally

Lamarck (Jean-Baptiste)

- Transmutation of species = inheritance of acquired traits
 - change of species
 - gives us everything that has become wrong about the scala
 - over time as organism function in the environment they are in, they will change to match up with that environment
 - infusarium: basic organism that over time acquires traits and becomes more complex and improves
 - simple organism and transforming to ideal perfect organisms and species change over time in order to adapt to their environment
 - trying to explain how diversity on planet arises and diversity occurs over a long time and some organisms also disappear
 - organism starts out and its essence slowly changes due to its environment
- inheritance of acquired traits that made giraffes necks longer
- at this point he is not aware that there is common ancestor but sort of there cause kind of infusarium
- he gives us the first explanation but inheritance of acquired traits is not something that would actually happen
- he is an essentialist

Leclerc (George-Louis - Buffon)	<ul style="list-style-type: none">- Wrote Histoire Naturelle- as he traveled around the world, noticed that there were organisms with similar appearances. ex. cat like animals; predators, claws, etc. so he questioned why there would be so many organisms with the same bases with slight differences in appearance- tries to explain changing diversity- one of first biogeographers; certain organisms found in specific regions that have slight different appearances due to region of habitat- everything came on that day but foods being consumed by the organisms was different which altered the essence of that organism so they became slight different types of that one organism. Not all as it was on that date.- environment has brought about those changes; he gave us that mechanism- each organism has an essence; essence for everything that goes from 1 generation to the next so stays the same. but he says there was 1 that slightly shifted to make variations of that one organism
Lyell (Charles)	<ul style="list-style-type: none">- (1797-1875)- uniformitarian theory of geological change<ul style="list-style-type: none">• long and slow process• notices strata and rocks that line up• bands tell major story• he says the world has been accumulating material over time and you can read those bands

<p>Mendel (Gregor)</p>	<ul style="list-style-type: none"> - Rediscovered 1900: his work was hidden in a journal and only published later - Law of segregation of characters - Law of independent assortment - his law describe how a genetic trait is passed from one to the next - his work is mathematical because of the punnett square - took different pee plants and would cross them and he would notice that 75% of pees contained one trait and 25% contained the other trait <ul style="list-style-type: none"> • 75% trait dominant • 25% trait recessive
<p>Natural selection</p>	<ul style="list-style-type: none"> - 5 theories by Darwin to help support this concept <ul style="list-style-type: none"> • this occurs in nature • traits that are advantageous will have better fitness, i.e. have more young and pass their genes on
<p>Natural taxonomy</p>	<ul style="list-style-type: none"> - the things classified are arranged according to the totality of their morphological resemblances, and the features which have been ascertained by observation to be the indications of many likenesses or unlikenesses - is a statement of the marks of similarity of organization; of the kinds of structure which, as a matter of experience, are found universally associated together
<p>Pasteur (Louis)</p>	<ul style="list-style-type: none"> - (1822-1895) - said life not from spontaneous generation and gave evidence to this through his experiment - gave us germ theory
<p>Plate tectonics</p>	<ul style="list-style-type: none"> - continental plates on the planet are moving around

Rock cycle	<ul style="list-style-type: none"> - slow and gradual change of the rock on the earth - phenomenon including erosion, volcanic activity and sedimentation that can adequately explain the appearance and disappearance of fossils
Schleiden and Schwann	<ul style="list-style-type: none"> - Cell theory <ul style="list-style-type: none"> – The basic unit of all organisms is the cell – Individual cells have all the characteristics of life – All cell come from the division of other cells - both microscopists - started making observations on tissues of different organisms and was the first time we are beginning to understand changes at the cellular level <ul style="list-style-type: none"> - discovered/observed particle (nucleus) wrapped in dark outer enveloped - shwann works with animals - schleidan working with plants
Special creation	<ul style="list-style-type: none"> - each species created on October 23, 4004 BCE (a saturday); sets age for earth - essences make sure everything stays the same and delivered by the same god or whatever greater power it might be
Transitional forms	<ul style="list-style-type: none"> - evolution of the horse: forests disappearing and start to be replaced by grass land so harder to hide from predators; therefore, over time there was a selection for long legs in order to escape predators more easily - plants responding to herbivory by making plant cell wall harder so harder to break through to reach cytoplasm where nutrients are; therefore, need a way to chew plant cell wall so developed great big grounding morals at the same time they were getting long limbs
Transmutation	<ul style="list-style-type: none"> - essentialists explanation: essence underwent radical change to create new organism/specie; i.e. rapid change

<p>Transmutation of species</p>	<ul style="list-style-type: none"> - inheritance of acquired traits <ul style="list-style-type: none"> • change of species • over time as organism function in the environment they are in they will change to match up with that environment • infusarium: basic organism that over time acquires traits and becomes more complex and improving <ul style="list-style-type: none"> - simple organism and transforming to ideal perfect organisms, species change over time in order to adapt to their environment - organism starts out and its essence slowly changes due to its environment
<p>Uniformitarian theory</p>	<ul style="list-style-type: none"> - Lyell's uniformitarian theory of geological change as the complete opposite to Cuvier's catastrophic theory. <ul style="list-style-type: none"> • is a long and slow process • notices strata and rocks that line up • he says the world has been accumulating material over time and you can read those bands in the rocks
<p>Vestigial structures</p>	<ul style="list-style-type: none"> - A vestigial structure is an anatomical feature that no longer seems to have a purpose in the current form of an organism of the given species. - ex.: <ul style="list-style-type: none"> • raising fur coat to increase heat or look bigger to scare of other organisms. • if don't put compensating membrane, under water won't be able to see

Wallace (Alfred)	<ul style="list-style-type: none">- Wallace: was about to publish something very similar to Darwin<ul style="list-style-type: none">• collecting specimens in Indonesia and coming up with same concept• if a trait allows you to produce more offspring, that trait will be passed on• however he did not have as much proof/evidence as Darwin