Literature review topic

Science, Biology

work: Biology Literature Review Topics Evolution of Middle Ear in Aerial Animals During the Devonian era, hearing organs were developed forthe first time. These were the fishes, so that organs were according to the water systems. The otolith organ was used to hear as inertial mechanoreceptors that gave direct response to the water system and the component of sound was acoustic motions of the particles. The evolution of basilar papilla organ wall started in Paleozoic tetrapod where that organ was along with non otolithic ciliary restraint. But it was also not enough for aerial hearing. Aerial hearing was developed in Triassic era. Tympanic ears appeared in vertebrates that were modern birds, lizards, turtles and crocodiles. The ear of fish was according to its water environment, and that of lizard is according to aerial environment. (Fay, 2008).

2. The Evolution of Heart Chambers from Amphioxus to Mammals

Heart is main organ of supplying blood to all the body organs. The position of heart is also different in different genus as well as the number of chambers. Amphioxus did not contain a true heart, but there were only blood vessels in different body parts that were divided to circulate blood in their specified organs. As the evolution went on, the animals started to grow a well-developed and distinct organ that has divisions. These chambers are atria and ventricle in mammals (Marcos S. Simões-Costaa, 2005).

Even the atria and ventricles are divided as right atrium, left atrium, right ventricle and left ventricle. These chambers do not allow any mixing of blood and there is a very less chance that oxygenated blood can get mixed with deoxygenated blood. The heart of amphioxus(genius: Branchiostoma) was not well shaped but it is now a very regular organ in mammals like

horse(genus : Equus). (José Xavier-Neto, 2010).

3. Cellular evolution from prokaryotes to eukaryotes

Prokaryotes are single celled organisms that do not have cellular organelles. They are simple in composition while eukaryotic are complex in nature. They comprise bacteria cells. For movement, they have flagella or cilia. Although they are living, but they do not have well developed systems and specialized organs. They have simple mode of living. Their circulatory, respiratory, etc. all systems are simplest of all organisms. With the evolutionary process, they have been changed to eukaryotes, the most developed organisms of the world. The eukaryotic organisms are very much advance and they have organelles specialized for specific functions. They contain chloroplast, ribosome, mitochondria and many other special structures that are specified to do special works. Chloroplast is used in the process of photosynthesis. Mitochondrion is the energy house of the cell (Nester, 2014).

Prokaryotes are always single celled organisms including bacteria. They can live as individual organisms or they may also live as colonies. There are also examples in which bacteria can have mutual relationship with other organisms. These relations can be beneficial for both or only for bacteria.

The eukaryotic organisms have further got advancement. They include different classes of animals and plants. Eukaryotic organisms include algae, fungi, invertebrates and vertebrates.

The plant cells are different from animal cells in some respects. They have cell wall out of cell membrane and also contain chloroplast that is responsible for the production of food by photosynthesis. Whereas animal cells do not contain cell wall. There outermost layer is the cell membrane.

They also lack chloroplast due to which they are unable to produce food for themselves.

The prokaryotes are not very specialized organisms. They have simple but sharp mode of living. Whereas eukaryotes are now most advance class of the organisms. They have organelles, organs, systems and finally an advance organism like human. Bacteria was simple organism but now mammals like goat(genus: Capra) a complex and organized mode of living (al, 2014).

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