

Evolutionary development

[Science](#), [Biology](#)



Evolutionary Development" Living organisms exhibit great structural complexity. Although they possess adaptive features that appear to have been specially designed, tremendous diversity exists in the living world. However, the idea of evolution of descent with modification had existed for more than 100 years, but prominent biologists and geologists could not accept, evolution has an enormous potential of special creation, where species have separate origins and do not change or change only within narrow limits. Two factors stymied evolutionary thinking, first the doctrine of catastrophism attempted to explain fossil discoveries and the second was typological thinking or essentialism (Shubin, 2008).

The view is given a new paradigm by Neil Shubin, (2008), a principal paleontologist who discerned the "missing link". He tried to trace the evolution through organs of human body. In his book *Your Inner Fish*, Shubin has enlightened people by establishing correlation between fossils and DNA. There exists similarity between human hands and fins of fish. Through his outstanding inscription, Shubin has elucidated the process of evolution in an easy manner which an ordinary person can understand. *Your Inner Fish* is one of the most invigorating, intellectually articulated thoughts, and convincing systematic scientific explorations; it is a chronicle of true voyage, potentially changes the outlook about the human body.

Your Inner Fish establishes the similarity between the humans and fish and elucidate that any human body is a live example of the whole narration of evolution. Human body possess genome links that is already an established fact but humans also depict the whole gamut of evolution which finds molecular basis too with the similarity in terms of DNAs and RNAs in the

genes. Shubin is not only an eminent scientist but he has proved his worth in the form of coherent and stylish author, besides being an irrepressibly excited coach who possesses wittiness, aptitude and cleverness who mesmerizes the readers with his thoughts and therefore readers are able to understand and formulate a real picture of the evolution. One of the finest ways to teach the students the similarity between various animals and humans. The simplest roadmap to their lies in fish (Shubin, 2008).

" The archives of natural history are filled with ... cases of species formation exploding as a response to ecological opportunity....Natural history becomes all the more pleasing and interesting when we look at it through the lens of evolutionary theory and search for the starbursts of adaptive radiation" (Wilson 1992, pp. 112).

Adaptive radiation is considered as the diversity from the ancestral characteristics of a given species. A variation that generates modified offspring to make use of an enormous selection of diverse environmental niches. However, such adaptive radiations are the outcome of ecological opportunity and evolutionary course. Under certain environmental conditions pre-existing opportunity may not be responsible for the adaptive radiation (Wilson, 1992).

Theoretical explanations are available to highlight the fact about the rare existence of replicated adaptive radiations, they are found to occur only in inadequately distributed taxa prevalent in some specific areas of the world. Possibility of a diversity of numerous species may generally exclude resemblance in evolutionary diversification. The fact remains unclear that radiations generally disclose processes necessitating phylogenetic rebuilding

of ancestral episodes. The amalgamation of environmental provisions encompassing genetic, biological, phylogenetic, and investigational progress assures the development of adaptive radiation in understanding adaptation and evolutionary diversification (Wilson, 1992).

The subject is of great concern as the present era is also witnessing diversity of life forms because of human interventions. Cutting down trees for human establishments is a selfish deed that is responsible for taking away the homes of innocent plant and animal communities. Wilson has explained evolutionary developments in an explicit manner. Wilson has defined speciation as the process of evolution which leads to the evolution of new biological species. Speciation was however coined for the first time by Orator F Cook for cladogenesis or splitting lineages. Much understanding is required to understand the role of genetic drift as a contributor of speciation. They could be natural speciation or artificially induced which is gaining prevalence in the present epoch under diverse laboratory studies, generating transgenic living entities. However, if a group of organisms is unable to speciate, adaptive radiation cannot take place (Wilson, 1992).

Niche defines the place of the species in an ecosystem. Depending upon the environmental conditions, a diverse forms of living organisms, called biodiversity is observed encompassing land and water ecosystems. During the process of speciation there is some acquisition of similar traits or characteristics in dissimilar ancestry which is attributed to the shared ecological niches. This is popularly known as convergent evolution (Wilson, 1992).

Thus, adaptive radiation encompasses spread of species of common

ancestry into diverse niches, while evolutionary convergence is the activity of the same niche by products of diverse adaptive radiations in different geographical regions. For instance, Tasmanian wolf of Australia, a marsupial (a product of adaptive radiation in Australia), however resembles the true wolf, a placental mammal (a product of parallel adaptive radiation in northern hemisphere) of Eurasia and North America. These two species converged to occupy similar niches within independent adaptive radiations on different continents (Wilson, 1992, pp. 95).

Work Cited

Shubin, N. Your Inner Fish: A Journey into the 3.5-Billion-Year History of the Human Body, First Edition. New York: Pantheon, 2008. Print.

Wilson. "Diversity of Life". Publisher: Harvard University Press. 1992.