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Science, Biology

Section/# Diversity of Life Although one might look at the diversity of plant and animal life and find it overwhelming within the construct of ecology and evolutionary biology, the fact of the matter is that the diversity that is represented can ultimately be biologically explained through the identifiers of speciation, environment as an agent of selective pressure, dispersal, and species interactions/community structures. As such, this brief analysis will seek to draw a level of inference from each of these four terms and utilize them as a way of explaining how and why the level of diversity that is exhibited in our environment is as broad as it is. Ultimately, each of the four determinants that will be discussed act in their own way to provide for the massive diversity of life that is and has been seen on planet earth.

With regards to speciation, this is a unique evolutionary concept whereby new biological species arise as a function of split lineages phyletic evolution. As a function of this, the layperson can understand the principle which sees varying differences arise within populations of farm animals as well as key differences arising in certain breeds of dogs as a process of the split lineage model that has herein been described. Although such a model is useful, it places a level of emphasis on something of a closed system due to the fact that a split lineage must signify a type of event that separated two groups in the first place. Although this is of course a fundamental precept of evolutionary biology, it helps to adequately explain the great level of diversity that is currently exhibited within the natural world (Abbot et al 2013).

Conversely, an environmental agent of selective pressures denotes the ways in which certain environmental factors act upon creatures to adapt them to

the particular way of life that is necessitated within their environment. Evidence of this can of course be seen in the giraffes of the savannah as they were increasingly necessitated to have longer and longer necks as a function of reaching the flora at the top of the tree canopy. In this way, environmental agents of selective pressures can alternatively be read as a type of natural selection.

Similarly, with regards to diversity of plants and animals, dispersion is something that ultimately cannot be ignored or disregarded due to the fact that the level of dispersal means that captive groups of species will develop in dissimilar ways to other captive groups of species. Evidence of this can of course be seen in the way that the American alligator and the African crocodile are fundamentally related but heavily differentiated. Finally, species interactions and community structures are the final determinant which will herein be discussed. What this ultimately refers to is the fact that the unique communities and environmental factors that impact upon groups of species will necessarily differ and therefore provide a different basis for life under which evolution will necessarily engage with new determinants and yield a different end product.

Reference

Abbott, R. R., Albach, D. D., Ansell, S. S., Arntzen, J. W., Baird, S. E., Bierne, N. N., & ... Jones, J. J. (2013). Hybridization and speciation Hybridization and speciation. Journal Of Evolutionary Biology, 26(2), 229-246. doi: 10. 1111/j. 1420-9101. 2012. 02599. x