

Darwinian speciation, publication inflation, and social reproduction in science

Christopher DiVittorio – April 2, 2021 – Invited Seminar at Center for Theoretical and Evolutionary Genomics, U.C. Berkeley

Abstract

Part 1 will introduce a model adaptive radiation study system, the plant genus *Encelia*, that diversified throughout the hot deserts of North and South America and the Galapagos Islands. The 18 described taxa exhibit striking phenotypic differences yet all can easily hybridize and do so at numerous locations. Despite high potential gene flow (hybridization), realized gene flow (introgression) is extremely low and species remain phenotypically discrete. Reciprocal transplant field experiments at several hybrid zones verified that extremely strong natural selection caused by adaptation to different habitats is maintaining phenotypic and genetic differentiation. Additional field experiments further identified salinity, wind, drought, and burial as major sources of divergent natural selection.

Part 2 will use my experiences in Integrative Biology and publishing our paper in PNAS as a springboard to discuss academia and its role in society in a post-COVID post-George Floyd world. We will start by introducing the concept of publication inflation, analogous to currency inflation, and discuss the consequences for quality of life, integrity of the scientific process, and the consolidation of academic publishing by for-profit corporations and private equity firms. We then identify how publication inflation and a half dozen other structural aspects of academia directly lead to social reproduction and marginalization. We end with a list of concrete solutions, and discuss the concept of levers.