

# Modern Synthesis

- Populations harbour **genetic variation** that emerges **randomly** through mutation and recombination.
- Populations evolve through changes in allele frequencies due to drift, gene flow, and especially, **natural selection**.
- The majority of genetic variants have a **small phenotypic effect**, so that the resulting phenotypic changes are gradual.
- Diversification occurs through speciation, which is mostly the result of reproductive isolation between **allopatric populations**.
- These processes, operating over long enough timescales, give rise to **cumulative changes** of such magnitude that the resulting species are grouped at higher taxonomic levels.

# The environment as a passive filter?

