

SCIENCE AS WAY OF KNOWING  
The Foundations of Modern Biology  
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by the President and Fellows of Harvard College, 1993  
ISBN 0-674-79480-X

- Deduction 1: If the hypothesis of evolution is true, the species that lived in the remote past must be different from the species alive today.
- Deduction 2: If the hypothesis of evolution is true, the older the sedimentary strata, the less the chance of finding fossils of contemporary species.
- Deduction 3: If the hypothesis of evolution is true, then we would expect to find only the simplest organisms in the very oldest strata and the more complex ones in more recent strata.
- Deduction 4: If the hypothesis of evolution is true, it must be possible to demonstrate the slow change of one species into another.
- Deduction 5: If the hypothesis of evolution is true, which assumes that all of today's species are the descendants of a few original forms, there should have been connecting forms between the major groups (phyla, classes, orders).
- Deduction 6: If the hypothesis of evolution is true, the age of the earth must be very great, possibly millions of years old.
- Deduction 7: There must be variation among organisms if the hypothesis of evolution is true.
- Deduction 8: Natural selection can be operative only if more offspring are born than survive.
- Deduction 9: If the hypothesis of evolution is true, there must be differences between the offspring that survive and reproduce and those that do not.
- Deduction 10: If the hypothesis of evolution is true, only those variations that are inherited will be important.
- Deduction 11: If the members of a taxonomic unit, such as the phylum chordata, share a common ancestry, that fact should be reflected in their structure.
- Deduction 12: If the members of a taxonomic unit share a common ancestry, that fact should be reflected in their embryonic development.
- Deduction 13: If evolutionary divergence is the basis of organic diversity, that fact should be reflected in the system of classification.
- Deduction 14: If there is a unity of life based on descent from a common ancestor, this should be reflected in the structure of cells.
- Deduction 15: If there is a unity of life based on evolution, that fact should be reflected in the molecular processes of organisms.

Give and evaluate evidence for the following deduction:

**"Deduction 16: If the idea (hypothesis) of evolution is to be established as true, we must be able to obtain information on organisms that lived in the past."**