

Features of the fossil record of evolution

Jerzy Dzik

Acta Palaeontologica Polonica 36 (2), 1991: 91-113

Neither allopatric speciations nor extinctions of lineages are directly observable in the fossil record. This significantly reduces the value of inferred durations of taxa as a basis for studies on patterns of evolution. The ranges of taxa detected in rock strata are inevitably shorter than the real durations of lineages. Rates of evolution estimated by counting reported ranges of taxa therefore appear higher than they really were. Biometric studies of gradually evolving lineages indicate that the durations of 'species' (morphologies) were actually many times longer. Therefore, the ancestor-descendant relationships along monospecific lineages remain the most important subjects of study in evolutionary paleontology. A way, in which an ancestor-descendant hypothesis can be falsified, is presented.

Key words: evolution, fossil record, methodology.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see creativecommons.org), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.