

The Great Creation/Evolution Debate

New Mexicans for Science and Reason (NMSR)

versus

Creation Science Fellowship of NM, Inc. (CSFNM)

NMSR Contact info: Dave Thomas : nmsrdaveATswcp.com (Help fight SPAM! Please replace the AT with an @)

This is Essay1a in the series.

NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR

Resolved by CSFNM: Evolution is not science.

Arguing against the resolution, on behalf of NMSR: Dave Thomas

NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR*NMSR

"Science" is the systematic study of the natural (observable) world. The Scientific Method involves collection of data by observation and experiment, and the formulation and testing of explanations (hypotheses) against these same data. When a collection of hypotheses is both explanatory and validated by the available data, it is elevated to the status of "theory." Theories are not held inviolable, but are modified, and occasionally rejected altogether, as new observations are made, or new experiments performed.

"Evolution" is understood by mainstream scientists and major scientific organizations as the process of descent with modification from common ancestors - for example, birds are considered to have evolved from small theropod dinosaurs like the velociraptors made famous in *Jurassic Park*. The *Theory* of Evolution is a constantly-improving, well-validated set of principles that explains *how* new species have developed, and involves many factors, including reproduction, heredity, variation, mutation, genetic drift, and preferential survival of organisms best adapted to the environment at hand.

Like any well-established field of science, evolution undergoes constant scrutiny and modification. The theory has changed immensely since 1859. Darwin had no concept of DNA or genes as they are understood today; he knew there must be some hereditary "factors," but that was about it. Darwin didn't know that huge numbers of proteins are formed from just twenty amino acids, or that there is a universal genetic code for translating DNA into amino acid sequences. The theory of evolution has been *expanded* and *changed* by all the new discoveries in molecular biology, *but it has not been rejected*. Indeed, the theory of evolution is essential in modern biochemistry, as it *predicts* the similarities of bio-molecules of various species, and is an extremely useful tool in developing strategies for diagnosis and treatment of many diseases. Today, detailed evolutionary trees can be developed simply by comparing genetic sequences for various species - and each such tree is another test of evolution.

Evolution involves conclusions about events in the remote past. Even though no one was there to observe these events, and they can't be "repeated" in a laboratory, we can still make reliable inferences about past earth history, just as we can often come to reliable findings of guilt or innocence in murder cases by examination of the evidence (such as fingerprints or DNA samples) left behind. This is not unusual in science, which frequently involves phenomena that can't be seen or touched directly, or "repeated" in a laboratory setting. Consider the daily rotation of the earth on its axis, or the annual motion of the earth around the sun; no one has ever stood on a stationary platform to observe these motions, yet their existence is accepted as scientific fact. Scientists accept the theory that the earth is a round, rotating globe because it is validated again and again in countless ways, day after day. This theory explains the apparent motion of the stars, the rotation direction of cyclones, and the curious motions of Foucault's pendulum. It explains why it's midnight in Germany when it's afternoon in New Mexico.

Similarly, no one has ever seen electrons, yet their existence is also accepted as scientific fact. Atomic theory explains why water breaks down under electric current into two parts hydrogen for every one part oxygen - because the molecule of water, the smallest such particle, is composed of exactly one atom of oxygen and two of hydrogen.

In the same way, evolutionary theory explains and makes comprehensible a whole host of phenomena. The theory explains the nature of the fossil record, "gaps" and all. It explains why trilobites and dolphins are *never* found fossilized in the same strata, and why the rapid radiations of new species from small regions to large areas appear as small "jumps" in the fossil record. Evolution explains why there are common structures shared by creatures such as humans, bats, and fish. Evolution explains biogeographical diversity - for example, why the flora and fauna of isolated regions like Hawaii or Australia are absolutely unique to those regions. Evolution explains why there are striking similarities in the embryonic development of frogs, sharks, and monkeys - these features were present in an early common ancestor. It explains why humans have fingerprints *on their feet*, and why we still have vestigial tailbones. Evolution explains similarities in the biochemistry of various species - for example, why the cytochrome c molecules of humans and chimps are much more similar than those of humans and rabbits. In observation after observation, the theory of evolution is validated again and again, day after day.

Like any robust scientific theory, evolution can be easily falsified in principle. For example, there is nothing to stop an Intelligent Designer from creating any type of creature imaginable - such as a centaur (four-legged horse body, topped by a two-armed human torso with head), or something like Edgar Rice Burroughs's green, four-armed, two-legged Martian giants. Either of these creatures would bring evolutionary theory to its knees in short order, because there are simply no ancestors from which they might have descended. A real Pegasus, with its bizarre mixture of horse and bird features, would also present huge problems for evolution. Similarly, finding true anachronisms, such as humans fossilized inside the stomach of an allosaur, or a trilobite in Cenezoic ("recent," up to 65 million years old) strata would constitute a huge problem for evolution. Evolution *can* be falsified; but never *has* been falsified, even after more than a century of testing.

Evolution meets the definition of the scientific method. It is subject to constant testing, examination, and modification. It explains a great, great deal about the world we live in. It provides insights and

[illegible]