

13. Panspermia

The current hypothesis that the first organisms were very simple is not plausible. How could simple organisms live and reproduce without having a photosynthesis system, respiration system or protein making system? There is no evidence that this is possible. Scientists facing this problem turned to the panspermia hypothesis. Panspermia proposes that life on Earth originated from Space.

Panspermia was proposed in 1903 by the Swedish chemist Svante Arrhenius. The hypothesis proposes that life exists throughout the Universe. It is spread by space dust, meteorites, asteroids, comets and planetoids.

This hypothesis was revived in 1973 by Prof Crick – the discoverer of the DNA double helix. In 1981 British astronomers Hoyle and Wickramasinghe provided proof that organic molecules exist in space. Russians reported that organisms could survive a journey through space. In 1996, a NASA team reported evidence of fossilized bacteria in a meteorite from Mars. In 2004 Richard B. Hoover of NASA discovered fossilized cyanobacteria in the Orgueil meteorite.

Why are some scientists convinced that panspermia is more plausible than evolution?

Since 1988 long term evolution experiments with bacteria have been under way. 12 identical populations of E. Coli bacteria have been isolated and grown in an incubator. At regular intervals genes from these samples are sequenced. Genetic mutation and recombination, and phenotypic variation have been observed to occur. When the bacteria's diet is changed, for example from glucose to maltose, the bacteria adapt to the new diet. But to metabolize a new sugar the bacteria adapt by calling up genes that they already possess. There is no evidence that even after 65,000 generations, a gene with a wholly new function has evolved.

Panspermia explains not only the origins of life, but the further development of higher organisms. In strong panspermia, the genes for evolutionary advances are not written by copying mistakes and reshuffling within an original set of bacterial genes. Instead they are installed by gene transfer. If these genes are spread by infectious agents such as viruses, they can transform whole populations in a single generation. The importance of gene transfer in evolution has gradually become recognized within mainstream biology.

Molecular and genetic research has shown that life is far more complex than has ever been suspected and panspermia is becoming a serious alternative to the theory of evolution.