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Stephen Fletcher, "Intelligent Design", in *Letters to the Editor*, The Times Literary Supplement, No. 5575, 05 Feb (2010), page 6.

Intelligent Design

Sir, – Stephen C. Meyer and Thomas Nagel are both sceptical of the chemical theory of evolution (Letters, January 15). Nagel suggests no alternative, but Meyer advocates a theory known as "Intelligent Design", which proposes that certain features of living things were introduced by a supernatural being at various times in the past. He has also written a book about it. Nagel initially puffed the book using quasi-scientific quotations, but now confesses that he took the presentation of the data "largely on trust".

The theory of "Intelligent Design" makes some outlandish claims about DNA and proteins. Concerning DNA, the theory makes the following assertions (despite much evidence to the contrary). (1) Ancient molecules of DNA were introduced onto the Earth by a supernatural being (not necessarily God), (2) all of the chemical components of the modern cell evolved uniquely from this original DNA, and (3) modern DNA sequences are, in the main, too complicated to have arisen by natural selection.

Concerning proteins, the assertions are even stranger. In contrast to the Bible, which tells us that God has intervened on Earth on very few occasions, Meyer's book tells us that the "Intelligent Designer" intervened every time a new gene or a new protein appeared. Well, human beings have 23,000 protein-coding genes. That is a very large number of supernatural interventions. Among bacteria, which live in soil and which outnumber human beings by trillions to one, it follows that the "Intelligent Designer" is actively intervening *every few seconds*. It seems there really are fairies at the bottom of Meyer's garden.

In the prologue to his book *Signature in the Cell*, Stephen Meyer states that it is an attempt to make a comprehensive, interdisciplinary argument for the "Intelligent Design" view of the origin of life. But as the author himself concedes (in an Appendix on page 496), the discovery of a precursor to DNA (such as RNA) would demolish the whole edifice. A "key prediction" is that "Future experiments will continue to show that RNA catalysts lack the capacities necessary to render the RNA world scenario plausible." It is Stephen Meyer's bad luck to have published his book in 2009, the very year that the RNA world scenario became eminently plausible. In February of that year came the discovery of the self-sustained replication of an RNA enzyme, by Lincoln and Joyce (*Science*, Vol. 323, pp. 1229-32). In March came the identification of the prebiotic translation apparatus (a dimer of self-folding RNA units) within the contemporary ribosome, by Yonath et al. (*Nature Proceedings*, Posted 4 Mar 2009). Finally, in May came the discovery of the synthesis of activated pyrimidine ribonucleotides in prebiotically plausible conditions, by Powner et al., (*Nature*, Vol. 459, pp. 239-242). I am afraid that reality has overtaken Meyer's book and its flawed reasoning.

Scientists do not yet have a detailed model of how primeval RNA came into being, or how it evolved. They are, after all, trying to reconstruct molecules that disappeared

from the face of the Earth about four billion years ago. Nevertheless, they have already shown that one tiny part of the ancient "RNA world" didn't actually disappear. It survived and evolved into our own human protein-making factory, and continues to make our fingers and toes. Think about that the next time you bounce a baby on your knee. Genuine science makes discoveries that fake science can only dream of.

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