Baumgardner's Calculations Simplistic

R.N. Rogers

9 April 1997

The Los Alamos Monitor

globalflood.org/origins-debate.html

Editor:

John Baumgardner was sufficiently arrogant (4/3/97) to teach a scientist of the stature of Llewellyn Jones "a simple arithmetic lesson." However, in doing so, he finally published enough of his "science" to test. An adequate scientific review, as expected in a scientific journal, would require more words than allowed by the Monitor. However, some review is required to show the quality of Baumgardner's "science."

Baumgardner's numbers come straight from the creationist literature (see Ross, THE FINGERPRINT OF GOD). The 10 to the 80th "atoms" were originally presented as a guess at the number of baryons (not atoms) "in the observable universe," and the original source indicates considerable uncertainty in that number. Cosmologists are still debating "dark matter" and trying to determine the total mass of the universe. We do not know what kind of particles represent the major mass of the universe or their numbers. Baumgardner's number cannot be justified by current scientific measurements, but, in any case, the number is meaningless in a discussion of spontaneous chemical reactions.

His weakest point is chemistry. He presents 10 to the 10th "interatomic interactions per second per atom" as a chemical rate. It is not clear whether he thinks all reactions leading to life would have had to occur in free space, but he does not understand or chooses to ignore all factors that affect chemical rates. He has to assume a system at constant concentration, temperature, and composition to maintain a constant rate.

Atoms require a specific "activation energy" to reach a reactive state, and the reaction is associated with a probability factor (not all collisions result in products). The magnitude of the activation energy changes by huge amounts, changing the rate, depending on composition and catalysis. Once two atoms have reacted, the molecule will affect the rate of subsequent reactions: Some reactions are extremely autocatalytic. At some point, different phases condense, and rates change at phase boundaries and in different phases.

Rates in liquid phases are not the same as in a gas phase or a solid. Surfaces can provide "templates" for the synthesis of complex molecules, and polarized light can direct the formation of specific optically active forms.

By totally ignoring all uncertainties and facts of chemical kinetics, Baumgardner can state with authority that the number of "random" trials required "for a protein of length 200" is 10 to the 130th, requiring more time than there has been. Baumgardner's argument is so simplistic as to be ludicrous.

The only place we can prove life appeared is on the Earth. In order to calculate how, we must know the composition of the primitive atmosphere, pressures, temperatures, composition of the early seas, nature of all' phases in contact with the water, degree of polarization of light, rates of all fundamental chemical reactions in the medium, etc., etc. Baumgardner has not even come close. Enough time? Quien sabe?

R. N. Rogers