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Message of the Molecules

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MESSAGE OF THE MOLECULES

As a child I routinely destroyed my mechanical toys: windup airplanes, automobiles, railroad engines, many of which emitted sparks and sounds, and moved. I just had to see what was inside these marvelous devices. After peeling away the thin layers of metal, I was invariably confronted with jumbles of springs, gears, and many unrecognizable objects. My toys lay in ruin, and I was no wiser.

As an adult and a biochemist, I am still in the dismantling business. Now I take apart bacterial cells, attempting to understand their workings. When I disassemble living cells, I end up with a collection of inert components, some of which are just as unrecognizable as the former springs and gears of my toys. And here comes the kicker: *I am unable to put them back together to reconstitute living bacteria!*

Why should this be so? I have kept every component of the cell; it is all there. All I have done is kill the cell by taking it apart, and now I wish to restore it to life by reassembling and restoring its components to their original states.

Here we come face to face with the chemical reality that undergirds all life processes. In living matter, none of the hundreds of chemical processes are permitted to run their full course and reach their end point, called equilibrium. If that does happen, living matter dies. Hence the dictum: "Old chemists never die, they just come to equilibrium."

When I take bacteria apart, I disconnect their interlaced system of

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chemical dis-equilibrium, which is essential for life, causing all chemical processes to run their full course and reach their end points. Putting all the components back together, I have a complete but dead cell, because within it every chemical process is at equilibrium. And today's technology is not able to undo that status of the hundreds of chemical processes in dead cells. Neither could such an event happen spontaneously, even if an infinite amount of time were available. *This is why living matter cannot possibly spring into existence spontaneously under any circumstance.*

Flukes of Nature?

Life's origin ranks with the most profound questions ever raised. It includes far-ranging implications about the nature of the universe and our place in it, the meaning and purpose of life, and predictions about the future course of life on Earth. Our model of life's origin also impacts our worldview, including our religious beliefs.

Two mutually exclusive alternatives dominate the debate on origins in this third millennium A.D.: Life on Earth could have been created by an extraterrestrial Creator, or it could have come into existence by a fortunate interplay of nature's forces. If Earth and the other planets of the solar system were indeed born out of a spinning cloud of gas over an extended period of time, as many scientists and philosophers assert, then it would be easier to suppose that life is a continuation of some mysterious ongoing process in the universe.

That this explanation appeals to scientists is not difficult to understand. Scientists are trained to believe that science can explain and solve any problem. This intrinsic optimism motivates scientists to wrestle new knowledge from the unknown. Further, if one assumes a universe without a Creator, the

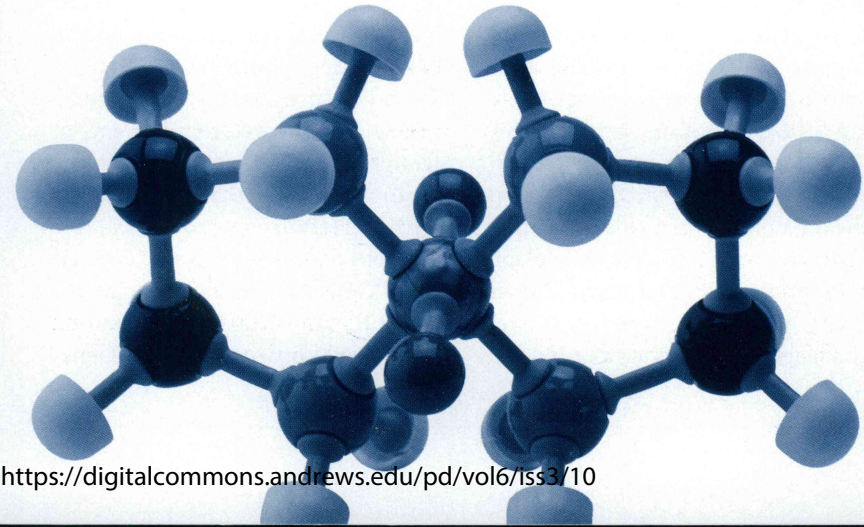

Photo by PhotoDisc

search for the mindless mechanisms responsible for the existence of everything about us would seem a noble quest. And humankind's future could well be enhanced if scientists were to discover these forces and harness them.

The Search for Birth Pangs

But here the scientist comes face to face with a major problem: Scientists are at their best when they study repeatable phenomena. But at present no solar system is forming before our eyes. Even worse, we do not see natural forces producing living organisms from solely nonliving matter. Yet the millions of life forms we see around us had to originate from somewhere. The scientist, assuming there must be a natural explanation for the origin of life, becomes a detective. He looks for clues to show how Mother Nature brought life to Earth. He conducts experiments to test which primordial scenario seems most likely to bring life into existence.

As matters stand, rejection of this concept leaves the naturalistic scientist with the alternative of not knowing where life came from. Usually scientists are comfortable with uncertainty. In fact, curiosity about the unknown is their chief motivator. When research uncovers an explanation for a scientific problem, the scientist frequently moves on to new challenges. But the question of life's origin is not just another scientific problem. It undergirds all other human enterprise. If we do not know how life originated, we do not know whether there is purpose to existence, or whether we are just interesting flukes of nature. While scientists have a high tolerance for the unknown, they have low tolerance for meaninglessness. Science is, after all, foremost a search for meaning in nature. The scientist, then, cannot accept the premise that the sum total of existence is meaningless.

Awesome Faith

Perhaps it is insulting to designate as meaningless the faith of those who believe in the evolution of matter from gaseous nebulae into highly structured biological entities. These evolutionists are awed by the sophistication seen in the biological world and challenged to understand it. The apparent kinship of different forms of living matter suggests a common origin. For these students of nature, science represents rational, logical thinking; and the notion of the supernatural represents the opposite—irrationality, magic, and a return to the pre-scientific age of fable and foible. It does not help the creationist's case that the story of Earth's creation comes from a 3,000-year-old manuscript! Surely, the scientist thinks, if the ancients had our scientific knowledge, their Creation story would little resemble its Gene-

sis format of the Earth and its biosphere originating in a six-day Creation event.

Celestial Avenues

We do not need to be historians or scientists to be aware of the intellectual mischief that has been committed under the guise of religion. However, the phenomenon of life on Earth cannot be convincingly explained without invoking the work of a supernatural Creator. This is not an argument for a "God of the gaps." It is our understanding of how living matter functions that drives the argument for not only a Designer but also an Implementor who can fashion biomolecules into living matter. This view suggests that the laws of nature have been ordained by the Creator to sustain an orderly Universe and that he has bequeathed them to us to be discovered and utilized. Belief in a supernatural Creator stimulates students of nature to discover the Creator's thoughts. For the creationist, then, religion and science are not mutually exclusive. Rather, they are different avenues toward the same Source.

Every new discovery represents a new self-disclosure by the Lord to us, and an invitation for a closer approach to our Maker. □

A LIVING BLANKET

Living organisms blanket the Earth so extensively that a typical gram of soil will contain at least 10,000 microbes. Spores (a microorganism) swarm in the air, and specimens of marine life have been seen in the deepest recesses of the oceans, several kilometers in the deep rocks, where hydrostatic pressures approach 1,000 atmospheres.

Not only are living organisms everywhere, they come in an astonishing array of forms. It is estimated that the number of diverse species on our globe runs into the millions! Their combined activities make Earth's surface a throbbing web of constant change.—*Origins* (1998), p. 8.