



November 2003

THE MATHEMATICAL IMPOSSIBILITY OF EVOLUTION

by Henry M. Morris*

ICR began publishing its popular free newsletter *Acts & Facts* in June 1972, over 31 years ago. The first two issues were 6-page, single-column, fold-over tract-like papers, black-and-white—not very impressive in appearance.

Issue No. 1 contained only news items describing some of our early campus meetings. Specially featured was the meeting held by Dr. Duane Gish on the Davis campus of the University of California. This was the meeting that involved an unscheduled 2½ hour debate with world-famous evolutionist, G. Ledyard Stebbins. A favorable response from the large student attendance and a very positive write-up in the student paper eventually led to Dr. Gish's famous cartoon booklet, *Have You Been Brainwashed?* which has been greatly used by the Lord in the past three decades, being distributed in the millions all over the world.

That issue also announced the publication of Dr. Gish's first book, *Evolution: The Fossils Say No!* which has been used widely and has won many evolutionists to accept the truth of special creation.

Issue No. 2 also was mostly news, but it did contain a semi-technical article on "The Mathematical Impossibility of Evolution" which is being reproduced herein as a matter of interest—not only of his-

torical interest as the forerunner of our popular *Impact* articles (the first of which was published in the first 1973 issue), but also because it still seems to show in a very simple way that evolution is impossible—no one, to my knowledge, has ever tried to refute it.

The third issue of *Acts & Facts* reported on the first ICR-sponsored expedition to Mount Ararat in search of Noah's Ark, led by John Morris. The first *Impact* article, however, was published in the January/February 1973 issue on the subject, "Evolution, Creation, and the Public Schools," urging that concerned citizens should use an educational and persuasion approach, rather than legislation or litigation, in trying to get a balanced approach to origins teaching accepted in the public schools.

In spite of this advice, however, many well-meaning creationists have tried—always unsuccessfully—to try to force this issue. We still recommend education and persuasion as the best policy.

Anyway, an *Impact* article on significant scientific or apologetics topics has been published every month since that first 1973 *Acts & Facts*. The forerunner of all these, still quite valid, I believe, is reproduced with a few modifications below:

*Dr. Henry Morris is Founder and President Emeritus of ICR.

The Mathematical Impossibility of Evolution

According to the most-widely accepted theory of evolution today, the sole mechanism for producing evolution is that of random mutation combined with natural selection. Mutations are *random* changes in genetic systems. Natural selection is considered by evolutionists to be a sort of sieve, which retains the “good” mutations and allows the others to pass away.

Since random changes in ordered systems almost always will decrease the amount of order in those systems, nearly all mutations are harmful to the organisms which experience them. Nevertheless, the evolutionist insists that each complex organism in the world today has arisen by a long string of gradually accumulated good mutations preserved by natural selection. No one has ever actually *observed* a genuine mutation occurring in the natural environment which was beneficial (that is, adding useful genetic information to an existing genetic code), and therefore, retained by the selection process. For some reason, however, the idea has a certain persuasive quality about it and seems eminently reasonable to many people—until it is examined *quantitatively*, that is!

For example, consider a very simple putative organism composed of only 200 integrated and functioning parts, and the problem of deriving that organism by this type of process. The system presumably must have started with only one part and then gradually built itself up over many generations into its 200-part organization. The developing organism, at each successive stage, must itself be integrated and functioning in its environment in order to survive until the next stage. Each successive stage, of course, becomes statistically less likely than the preceding one,

since it is far easier for a complex system to break down than to build itself up. A four-component integrated system can more easily “mutate” (that is, somehow suddenly change) into a three-component system (or even a four-component non-functioning system) than into a five-component integrated system. If, at any step in the chain, the system mutates “downward,” then it is either destroyed altogether or else moves backward, in an evolutionary sense.

Therefore, the successful production of a 200-component functioning organism requires, *at least*, 200 successive, successful such “mutations,” each of which is highly unlikely. Even evolutionists recognize that true mutations are very rare, and beneficial mutations are *extremely* rare—not more than one out of a thousand mutations are beneficial, at the very most.

But let us give the evolutionist the benefit of every consideration. Assume that, at each mutational step, there is equally as much chance for it to be good as bad. Thus, the probability for the success of each mutation is assumed to be one out of two, or one-half. Elementary statistical theory shows that the probability of 200 successive mutations being successful is then $(\frac{1}{2})^{200}$, or one chance out of 10^{60} . The number 10^{60} , if written out, would be “one” followed by sixty “zeros.” In other words, the chance that a 200-component organism could be formed by mutation and natural selection is less than one chance out of a trillion, trillion, trillion, trillion, trillion! Lest anyone think that a 200-part system is unreasonably complex, it should be noted that even a one-celled plant or animal may have millions of molecular “parts.”

The evolutionist might react by saying that even though any one such mutating organism might not be successful,

surely some around the world would be, especially in the 10 billion years (or 10^{18} seconds) of assumed earth history. Therefore, let us imagine that every one of the earth's 10^{14} square feet of surface harbors a billion (i.e., 10^9) mutating systems and that each mutation requires one-half second (actually it would take far more time than this). Each system can thus go through its 200 mutations in 100 seconds and then, if it is unsuccessful, start over for a new try. In 10^{18} seconds, there can, therefore, be $10^{18}/10^2$, or 10^{16} , trials by each mutating system. Multiplying all these numbers together, there would be a total possible number of attempts to develop a 200-component system equal to 10^{14} (10^9) (10^{16}), or 10^{39} attempts. Since the probability against the success of any one of them is 10^{60} , it is obvious that the probability that just one of these 10^{39} attempts might be successful is only one out of $10^{60}/10^{39}$, or 10^{21} .

All this means that the chance that any kind of a 200-component integrated functioning organism could be developed by mutation and natural selection just once, anywhere in the world, in all the assumed expanse of geologic time, is less than one chance out of a billion trillion. What possible conclusion, therefore, can we derive from such considerations as this except that evolution by mutation and natural selection is mathematically and logically indefensible!

Discussion

There have been many other ways in which creationist writers have used probability arguments to refute evolutionism, especially the idea of random changes preserved, if beneficial, by natural selection. James Coppedge devoted almost an entire book, *Evolution: Possible or Impossible* (Zondervan, 1973, 276 pp.), to this type of approach. I have also used other probability-type arguments to the same end (see, e.g.,

Science and Creation, Master Books, pp. 161–201).

The first such book, so far as I know, to use mathematics and probability in refuting evolution was written by a pastor, W. A. Williams, way back in 1928. Entitled, *Evolution Disproved*, it made a great impression on me when I first read it about 1943, at a time when I myself was still struggling with evolution.

In fact, evolutionists themselves have attacked traditional Darwinism on the same basis (see the Wistar Institute Symposium, *Mathematical Challenges to the Neo-Darwinian Interpretation of Evolution*, 1967, 140 pp.). While these scientists did not reject evolution itself, they did insist that the Darwinian randomness postulate would never work.

Furthermore, since the law of increasing entropy, or the second law of thermodynamics, is essentially a statement of probabilities, many writers have also used that law itself to show that evolution on any significant scale is essentially impossible. Evolutionists have usually ignored the arguments or else used vacuous arguments against them (“Anything can happen given enough time”; “The earth is an open system, so the second law doesn’t apply”; “Order can arise out of chaos through dissipative structures”; etc.).

In the real world of scientific observation, as opposed to metaphysical speculation, however, no more complex system can ever “evolve” out of a less complex system, so the probability of the naturalistic origin of even the simplest imaginary form of life is zero.

The existence of complexity of any kind is evidence of God and creation. “Lift up your eyes on high, and behold who hath created these things, that bringeth out their host by number: He calleth them all by names by the greatness of His might, for that He is strong in power; not one faileth” (Isaiah 40:26). 🙏

HOW DID THE VERTICAL COLUMNS AT DEVIL'S TOWER FORM?

by John D. Morris, Ph.D.

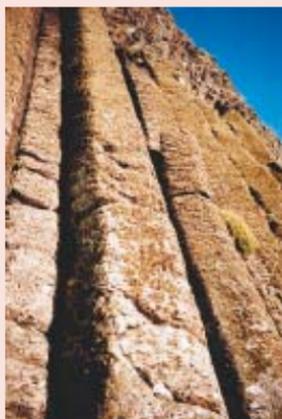
Visitors often marvel at the beautiful columns of rock standing at places like Devil's Tower in Wyoming. There a mountain of rock rises from the ground in a series of regular, multi-sided columns, extending scores of feet into the air. Columns at the Giant's Causeway in Ireland and elsewhere seem so precise that fanciful legends have grown up around them.

These huge columns consist of once-molten igneous rock which was intruded into other sediments, or deposited and later covered with other sediments. As hot, molten lava cools and solidifies, it shrinks in volume and fractures along vertical planes, with geometric considerations often orienting the fractures into five or six-sided polygons. Hardened basalt is usually much harder than surrounding sediments whose erosion often exposes spectacular walls of columns.

Elsewhere, such horizontal layers of vertical columns cover extensive areas, far larger than similar layers which have formed in historic times. This seems to speak eloquently of past volcanic processes being regionally catastrophic, proceeding at rates, scales, and intensities far exceeding the ones we observe today. Surely Earth's geologic past was different from its present, particularly during the great flood of Noah's day. Evidence of catastrophic processes operating on a regional scale—that's what we would expect to find as results of the Flood.

A persistent scientific objection to the Biblical doctrine of the young earth has arisen over this issue, however, claiming that the necessary cooling time for such immense volumes of basalt would take far longer than mere thousands of years. Once again, good scientific research provides an answer, and it has to do with water.

While much heat is removed by simple conduction from the lava to the surrounding rock or air, a surprising amount of heat is removed by water.



Vertical columns 40' high at Giant's Causeway in Ireland.

Water is present in any lava flow or intrusion, and as this superheated water flashes to steam and exits the lava, it carries much heat away with it. Furthermore, as rain or surface water penetrates to the hot layer, it too heats, turns to steam and leaves, cooling the lava. Experiments and observations have shown this convection of heat to be the key. Measured rates of cooling from the surface to the interior exceed several feet per month. The

vertical joints which form the distinctive columns facilitate the migration of water in and steam out of the rock.

The next time you notice these interesting vertical columns, just think of the great Flood of Noah's day. Think of catastrophic events, on a large scale and at a rapid pace. And put it all in its "Back to Genesis" perspective.

See more on the formation of basaltic columns at: icr.org/research/as/igneousbodies.html 



© 2003 by ICR • All Rights Reserved

Single Copies 10¢ • Order from: **INSTITUTE FOR CREATION RESEARCH**

P.O. Box 2667, El Cajon, CA 92021 • Available for download on our website (www.icr.org).