



# Creation Matters

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## Distinctions Exist between Evolution Fact and Theory

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[Editor's note: The references have been added from the authors' original manuscript.]

**W**e, the undersigned, oppose the Statement on Evolution passed by the Professional Concerns Committee of the Faculty Senate at Northern Kentucky University. Use of the term "evolution," without clarifying that it refers to different processes, one fact and one theory, hinders both science and education and promotes confusion and misunderstanding.

The term "evolution" is used to refer to two different things. "Evolution" is used to refer to relatively minor variations or adaptations (e.g., changes in the size of finch beaks or the coloration of peppered moths). This is a proven scientific fact. "Evolution" also is used to refer to the conjecture that, given sufficient time, these adaptive changes could be extended such that all creatures could have developed from a common ancestor. This is an un-

proven scientific theory (see Johnson, 1993 for a review).

### Scientific debate

Debate exists within the scientific community about evolution. Some evolutionists suggest that this latter type of evolution is not a matter of dispute among serious scientists, and is questioned only by those who are ignorant. But consider the example of Pierre Paul Grassé, author of *Evolution of Living Organisms* (1977). Theodosius Grigorievich Dobzhansky, a giant of the Neo-Darwinian Synthesis, wrote of Grassé's book:

"[Its] purpose is to 'destroy the myth of evolution, as a simple, understood, and explained phenomenon,' and to show that evolution is a mystery about which little is, and perhaps can be, known. Now one can disagree with Grassé but not ignore him. He is the most distinguished of

French zoologists, the editor of the 28 volumes of *Traité de Zoologie*, author of numerous original investigations, and ex-president of the Academie des Sciences. His knowledge of the living world is encyclopedic." (1975, p. 376)

In truth, it does not matter if most scientists accept or dispute the theory of evolution. In science, facts are not decided by vote, but by evidence. Consider two areas of evidence that pertain to the theory of evolution.

### The fossil record

Even Charles Darwin recognized that the fossil record was a problem, but he thought gaps would be filled in to display the gradual sequence that his theory predicts. This has not occurred.

The prominent evolutionist Stephen

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## Kanawha County WV Grassroots Update

by Karl Priest, M.A.

Editor's note: *In the previous issue Karl reported the activities surrounding a grassroots effort in Kanawha County, West Virginia. Before the School Board was a resolution supporting teachers who wish to teach controversial subjects and theories so long as they are "relevant" and "are presented in an appropriate, factual, and unbiased manner ... which promotes the understanding of all points of view..." We left the story in the midst of the battle.*

**T**he School Board had attempted to garner support for rejecting the Resolution (see Table 1 in previous issue) by sending a comment request to Faculty Senates and Local School Improvement Counsels. The memo was an obvious ploy to generate a backlash against creation science, which was

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not even the issue at hand. On December 6 the media revealed, without fanfare, that the comments received were highly in favor of teaching creation science. This caused the board member who had insisted on the comment period to spin the results by saying, "I don't think any of them really understood the intent of the resolution."

In the meantime, Dr. Joseph Mastropaolo, of Huntington Beach, CA, had heard of our battle. Without knowing that the *Charleston Gazette* editor was a bitter enemy of local creationists, he had contacted the editor and offered to come here to speak as a scientist. After being rebuffed, Dr. Mastropaolo mailed a letter to the only other person whose name he knew from news reports — board member Betty Jarvis. I was awed when Betty called me about the letter, for I had just ordered 100 copies of a current ICR *Impact* article written by Dr. Mastropaolo.

### Challenging evolutionists

Dr. Mastropaolo then began an email exchange with local evolutionists, challenging them to debate. This sent them into a panic because they had never heard of him. The details of their attempts to avoid debate would make an interesting article in itself. Dr. Mastropaolo had a knack for revealing their religious prejudice and academic cowardice. As a result of a challenge I made to the local Unitarian minister, Dr. Mastropaolo was allowed to speak at the Unitarian church.

That was an experience. The place was standing room only, and attendees included most of the "big time" evolutionists of the area. After listening to a witch lead part of the opening service, and avoiding a trap laid by the Unitarian minister (intended to ridicule Dr. Mastropaolo's credentials), Dr. Mastropaolo presented his case that evolution is biologically impossible and is, in reality, an occult religion.

### A lunch worth remembering

Afterwards, I invited to lunch Dr. Karl Fezer, the West Virginia liaison for the National Center for Science Education (an anti-creation group). The *Gazette* editor tagged along, and what transpired was truly amazing. Dr. Mastropaolo and Dr.

Fezer debated for over two hours, and Dr. Fezer was so overwhelmed that the atheist newspaper editor later said that evolution seemed silly, but he could not accept anything else due to the suffering which exists in the world.

During the week that Dr. Mastropaolo was here, and even after he left, the Unitarian minister and the *Gazette* tried to slander him by claiming he was only a physical education teacher. (His Ph. D. is in Biomechanics/Physiology, and he is Prof. Emeritus, Calif. State Univ., Long Beach, and Adjunct Prof. of Physiology, ICR Graduate School.) They did not see the irony in this because, even if true, they were admitting that they were afraid to debate a P.E. teacher. Dr. Mastropaolo, a gentleman's gentleman, calmly went about his business during his visit to our community. He impressed a skeptical talk show host so much that, in separate programs, the talk show host criticized the Unitarian's ethics and ridiculed the evolutionists for failing to academically defend their sacred cow.

### Banned from high school

Space does not allow a detailed report of all that transpired between Thanksgiving and the Board's vote on December 16. There were statewide and local radio talk shows, one-sided television reporting, and front-page newspaper coverage (including an onslaught of *Gazette* articles seeking to cast the debate as being between science and fanatical Christianity). Dr. Mastropaolo, at age 72, had a grueling speaking schedule. He was even banned from one high school, and was forced to march down the street with interested junior high kids to meet at a local church.

By the time the board meeting date had arrived, the *Charleston Daily Mail* had "lost" an article I submitted, the ACLU and Americans United for Separation of Church and State had threatened to sue, and the board attorney had circulated a secret memo requesting that board members vote against the very resolution he had prepared! We personally contacted two board members who earlier had expressed open-mindedness, citing legal and scientific facts to counter every argument they presented. However, it was obvious that the vote was going to be 4-1 against the resolution.

## Kanawha County's Anti-Creation Science Policy

Does this policy comply with the 1987 Supreme Court decision in *Edwards vs Aguillard*? The Court's decision is commonly understood to have prohibited the teaching of creation science. However, the decision banned only the **religiously motivated, compulsory** teaching of creation science. The majority decision in fact opined that, with respect to theories about man's origin, teachers are "free to teach any and all facets of this subject" (p. 9). Furthermore, the court stated:

Teaching a variety of scientific theories about the origins of humankind to school children might be validly done with the clear secular intent of enhancing the effectiveness of science education (p. 14).

Here is Kanawha County's policy. You be the judge.

### KANAWHA COUNTY SCHOOLS ADMINISTRATIVE REGULATION

Creation Science

Issued: 10.19.1987

5.01 Status. Neither State learning outcomes, nor any current program of studies includes a creation component. The teachers of science and all other curricular areas are expected to provide instruction toward mastery of the State learning outcomes as interpreted by the current program of studies. Thus, creation science is not to be taught.

5.02 Creation Science Materials. Any materials pertaining to Creation Science, if retained, shall be housed in the school library.

## The showdown

The night of the meeting the Unitarians were there in force, with their minister orchestrating their offense. As soon as Dr. Mastropaolo sat down, the Unitarian minister got right in Dr. Mastropaolo's face, angrily accusing him of being from ICR. I had to actually place my body between them and force the minister away. Later, the minister was caught reading my notes and writing something as he read them.

The meeting lasted over four hours. There was an overwhelming majority of attendees in favor of the resolution. I had only requested six speakers besides myself, but many others came to speak. Some of the others were a great asset to our side, but many were well-intentioned people

who came to support the teaching of creation science which, as noted previously, was not the subject of the Resolution. The opposition had its usual quota of college professors and liberal ministers.

The vote went as expected, but I am tremendously encouraged. The strategy employed here can easily be refined and used elsewhere. It just takes a small group of dedicated people. First, present to your local board of education something like the Buckna-Laidlaw "Origin of Life" policy (see endnote in previous article). In order to reject such a policy, board members will have to reveal their philosophical position on the subject of origins. If possible, find a well-qualified scientist to challenge evolutionists to debate.

## Stay tuned

The battle is worth fighting, because those who fight it will find friends and supporters they never knew were there. Despite the difficulties, there will be many inspiring moments that will be forever cherished. Every battle puts a small hole below the waterline of the ship of evolutionism. Eventually it will sink. As for us locally, to quote Dr. Mastropaolo: "The events prior to the board meeting were just a warm-up period, the meeting was the starter's pistol, now the race has begun." Stay tuned.

# Homology Continued: Morphogenetic and Hox Genes

by George F. Howe, Ph.D.

I am indebted to geneticist Matthew Rainbow (who does not share my view of origins) for having brought the burgeoning field of fruitfly (*Drosophila melanogaster*) morphogenesis to my attention. These morphogenetic genes demonstrate a complexity and integration that stagger the imagination. This subject can be studied further by consulting any modern textbook in genetics or embryology. In a search of library sources, one will also find that literally hundreds of entries on this topic exist, most of them having been produced in the last ten years. Both the design features of Hox genes that workers have understood, and also some unexplained mysteries surrounding them, fit with the creationist views expressed in my earlier articles.<sup>1,2</sup>

## Morphogenetic genes — a "cascade"

It is impressive to learn that products of the **maternal effect genes** formed by nurse cells surrounding the egg actually confer on that egg a front-to-back and a dorsal-to-ventral polarity, even before the egg begins its division. The transcription product of the *dorsal* gene, for example, paves the way for the dorsal parts of the embryo to develop later and in a different manner than the ventral parts. Reviewing this topic, Snustad, Simmons, and

Jenkins<sup>3</sup> pointed to a lethal mutation which knocks out the *dorsal* gene.

The product of another *Drosophila* nurse cell gene called *nanos* accumulates at the posterior end of the egg. The *nanos* transcription product prevents the mRNA's of another gene, called *hunchback*, from accumulating in the posterior end of the egg. The end result is that the posterior end of the egg is readied to develop into the embryonic posterior. Mutations that affect the *nanos* gene are also harmful. Gilbert<sup>4</sup> noted that such mutations "... result in embryos that have deletions or duplications of heads, tails, dorsal structures or ventral structures." These mutations lead to imbalance and death, not to beneficial evolutionary adaptations.

As fly development continues, gradients of gene products from maternal effect genes regulate the expression of another group of genes called **gap genes** throughout the embryo. In a mutation of one of these gap genes called *kruppel*, "... whole regions of embryonic segments are eliminated."<sup>4</sup> Snustad, Simmons, and Jenkins indicated that "Mutations in the gap genes cause an entire set of contiguous body segments to be missing; that is, they create an anatomical gap along the anterior-posterior axis."<sup>3</sup> Like mutations in maternal effect genes, gap gene mutations

are also very deleterious to the fruit fly.

The gap genes thereafter regulate **pair-rule** genes which are expressed in seven bands, dividing the embryo into 14 zones. Snustad, Simmons, and Jenkins reported that "mutations in each of the several pair-rule genes produce embryos with only half as many parasegments as the wild type."<sup>3</sup> As a result of such mutated pair-rule genes, every other parasegment is missing — some mutations delete odd numbered segments, some delete the even ones.

Next, the **segment polarity genes** become active because they are regulated by transcription products of the other genes previously activated. Segment polarity genes define an anterior and posterior compartment for each segment. Mutations of segment polarity genes likewise hold little promise for evolution. For example, mutations in the segment polarity gene *gooseberry* cause the posterior half of each embryonic segment to be replaced by a mirror image copy of the adjacent anterior half segment."<sup>3</sup> This, too, is not an advantage.

Herein, then, is an amazing hierarchy of embryonic controls in which nurse cell gene products control gap genes, the gap genes later control the pair-rule genes, and finally pair-rule genes regulate the tran-

scription of segment polarity genes. “The genetic control of segmentation shows how sets of genes work in a regulatory cascade to determine the identities of groups of cells in different regions of the embryo.”<sup>3</sup> Surely these interlaced developmental control patterns leave plenty of room for a well-founded belief that a wise designer planned this system.

## Homeobox (Hox) genes

A group of homeotic or Hox genes has been discovered which initiate organ development. They each encode homeodomain transcription factors that have been shown to turn on developmental pathways involving several thousands of other genes.<sup>3</sup> The 60 amino acids in a typical homeodomain protein (corresponding to 180 base pairs of DNA) have been found to be quite similar in *Drosophila*, mice, men, and other organisms.

Concerning this similarity (i.e., homology) of homeodomain chemistry, extending from invertebrates throughout all the vertebrates, macroevolutionists state that the sequence has been **conserved** throughout evolutionary history. But the very use of the word “conserved” (a term that has become heavily ensconced in the literature) is premature, prejudicial, and non-scientific. Homeodomain homologs likely resulted instead from a wise creator who used them repeatedly while creating many different animals. Since these genes and gene products serve as regulatory “switches” that activate networks of other genes, perhaps the creator incorporated various numbers of these critical switching genes into different kinds of animals for reasons which we, as scientists, must discover.

Although first seen in *Drosophila*, Hox genes have been found in multicellular animals in general, from nematodes (parasitic worms) to mammals. The number of Hox genes present in a particular animal kind varies: sponges have one Hox gene, arthropods eight, and mammals 38. That this universal presence of very useful switching genes could have been the product of common design rather than common ancestry is unfortunately never mentioned in the technical reports on this phenomenon. Creationists are saddened to

find that their evolutionist colleagues are completely excluding this intelligent design option from their textbooks and research reports. This exclusion stems from religion and philosophy, not science.

## Switching on another cascade

A particular Hox gene switches on a cascade of other genes (target genes). These target genes then govern the manufacture of a particular body organ, such as a leg or an eye in a fruit fly. In *Drosophila* or mice, a very similar Hox gene triggers eye production. But the transcription products of many other genes actually proceed to make a multifaceted compound eye in the fruit fly, or a mammalian eye in a mouse. Although the Hox genes are homologous, the two eyes eventuating from them are very different. Wells and Nelson<sup>5</sup> make this same point quite clearly:

“The very universality of homeotic genes, however, raises a seri-

**That this universal presence of very useful switching genes could have been the product of common design rather than common ancestry is unfortunately never mentioned ...**

ous problem for this view. Although mice have a gene very similar to the one that can transform a fly’s antenna into a leg (*antennapedia*), mice do not have antennae, and their corresponding gene affects the hindbrain; and although mice and flies share a similar gene which affects eye development (*eyeless*), the fly’s multifaceted eye is profoundly different from a mouse’s camera-like eye. In both cases (*antennapedia* and *eyeless*), similar homeotic genes affect the development of structures which are non-homologous by either the classical morphological definition or the post-Darwinian phylogenetic definition. If similar genes can ‘determine’ such radically different structures, then

those genes aren’t really determining structure at all. Instead, they appear to be functioning as binary switches between alternate developmental fates, with the information for resulting structures residing elsewhere.”

Some years ago Willem Ouweneel, who was a specialist in homeotic genes at the Royal Netherlands Academy of Sciences, published a summary article on the origins implications of homeotic **mutants** in the *Creation Research Society Quarterly*.<sup>6</sup> Such mutations, in which certain organs are replaced by entirely different organs, have been frequently observed in *Drosophila*. An example of such a mutation is the transformation of a wing into a leg-like structure. Ouweneel made a number of important points in his article, among which are these, which I’ve paraphrased below:

(1) Homeotic mutant organs yield large disadvantages to the organism. No single homeotic mutant organ is known that is functional and therefore useful to the organism. The organ may in fact be destructive. The animal is sometimes left without the original organs which were replaced by the mutant organs such that *pod* flies, for example, cannot fly.

(2) What is needed in macroevolution is the origin of essentially new organs. Homeotic mutant organs are not new, however, but are copies of organs found elsewhere in the animal.

(3) Homeotic mutations do not result in the appearance of higher levels of organization. Most such mutants should be classed as backward steps.

(4) Hox gene mutations simply show that one mutation can disturb not just one small morphological feature, but the expression of dozens of other genes.

If macroevolution occurs easily, quickly, and on a worldwide basis (as some workers maintain), then why are macroevolutionary events not being rou-



tinely reported in journals like *Science* and *Nature*? If all that is required for major changes to occur by chance in nature is the right burst of transposon activity to produce the right mix-and-match of enhancer segments shunted onto new chromosomal locations, why did it take the ancestors of the fly and the mouse 500 million years to evolve their separate ways? If *Acanthostega* arose once from a lobe-finned fish by mutation of a few Hox genes, why don't the lobe-finned fish repeat this performance now? If this is "asking too much," then macroevolutionism is not science, but is just one among several other competing origins models.

### Nothing new

Hox gene studies actually bring nothing new to the creationist versus evolutionist standoff. The crux of the difference between scientific creationists and scientific

macroevolutionists regarding all homologies (whether between organs, biochemistry, or Hox genes) still comes in answering this key question: does resemblance necessarily mean kinship (**common ancestry**), or can it in many (or most) instances indicate **common design**? Creationists adopt the second approach, that "similarity shows common design." They believe this fits with the known data of science concerning homology and analogy.

If I could see a human arise in nature now, from homeotic mutations in a pygmy chimpanzee population, or if I could read that the change from lobe fins to tetrapod limbs has been observed off the coast of Madagascar, I would immediately become a macroevolutionist, and at that point macroevolution would have become a scientific fact. Until then, however, in the name of real science, I see no reason to change from the view that God made many sepa-

rate kinds, and that variation occurs only within fixed limits.

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## Probabilities, Monkeys & Natural Selection

by David Woetzel

One of the biggest challenges for creationists has been to clearly illustrate the absurdity that passes off as probability arguments in the naturalistic/evolutionary model of origins. The old adage keeps popping up anew: "Given so much time the 'impossible' becomes possible, the possible probable, and the probable virtually certain. One has only to wait: time itself performs miracles."<sup>1</sup> The reality is that the impossible is still impossible, even with the magic elixir of huge spans of time (though with punctuated equilibrium in vogue, these time spans are themselves in doubt).

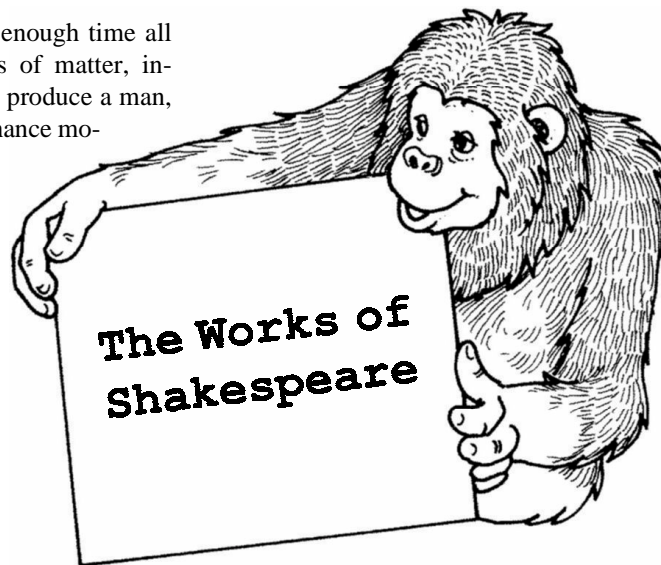
On June 30, 1860, at the Oxford Union in England, Anglican Archbishop of Oxford University, Samuel Wilberforce, and evolutionist and agnostic Thomas Huxley were engaged in the "Great Debate." Bishop Wilberforce, a Professor of Theology and Mathematics at Oxford University, argued that the design we see in nature required a Designer. Therefore, the information found in living systems (an evidence for design) could not arise by random chance. Huxley, on the other

hand, declared that given enough time all the possible combinations of matter, including those necessary to produce a man, will eventually occur by chance molecular movement.

### Typing monkeys

To prove his point, Huxley asked Wilberforce to allow him the service of six monkeys that would live forever, six typewriters that would never wear out, and an unlimited supply of paper and ink. He then argued that, given an infinite amount of time, these monkeys would eventually type up all of the works of Shakespeare. Unfortunately for Huxley, the availability of the proposed infinite amount of time is just the first problem in his argument.

Since then, creationists have often employed this classic monkey myth to illustrate the probability problems inherent to the naturalistic/evolutionary scenarios.



A good example of the evolutionists' response is given by Hawking. After citing the monkey illustration he comments, "very occasionally by pure chance they will type out one of Shakespeare's sonnets."<sup>2</sup> This is absurd. The assertion that the monkeys **will not** in fact perform this feat is as close as we can get to a scientific fact. ReMine drives this point home:

“The monkeys could not randomly type merely the first 100 characters of Hamlet. If we count only lowercase letters and spaces (27 characters in all), then the probability of typing the 100 characters is one chance in  $27^{100}$  (one chance in  $1.4 \times 10^{143}$ ). If each proton in the observable universe were a typing monkey (roughly  $10^{80}$  in all), and they typed 500 characters per minute (faster than the fastest secretary), around the clock for 20 billion years, then all the monkeys together could make  $5 \times 10^{96}$  attempts at the 100 characters. It would require an additional  $3 \times 10^{46}$  such universes to have an even chance at success. We scientifically conclude that the monkey scenario cannot succeed. For the scientist it would be perverse to insist otherwise.”<sup>3</sup>

Creationists generally employ this illustration in three of the most unlikely naturalistic/evolutionary scenarios: a fine-tuned universe, abiogenesis, and biological complexity arising by random mutations. Their opponents may grudgingly take the first two scenarios sitting down. However, the evolutionists will rise to their feet to cry foul in the third instance. Here the mechanism of natural selection is proposed to save the day, supposedly extricating naturalism from the probability mire.

Hence an important modification to the monkey-and-Shakespeare story is suggested by Ruse. “Suppose, however, that every time the monkey strikes the ‘right’ letter, it records; but, suppose also that ‘wrong’ letters get rubbed out (literally or metaphorically!). And suppose the elimination of the wrong letter is the full consequence of a ‘mistake’: one does not lose what has already been typed.”<sup>4</sup> The idea is that natural selection acts as an invisible cosmic teacher, allowing successes, while rubbing out failures.

### A bottle of white-out

There are at least three problems with Ruse’s scenario. First, Ruse takes a very naïve view of natural selection. If one follows the analogy, the poetic sensibility and grammatical complexity become “fitness.” On the bottom of the proverbial hill is a random jumble of the various marks

## How Small is Small?

Tossing around numbers with large exponents may not immediately impress us. But how large do the exponents have to be before the event becomes impossible? Here is what one author has stated:

“We may be led to set at  $10^{-50}$  [i.e., 1 chance in  $10^{50}$ ; editor] the value of negligible probabilities on the cosmic scale. When the probability of an event is below this limit, the opposite event may be expected to occur with certainty, whatever the number of occasions presenting themselves in the entire universe.” — Borel, E. 1962. *Probabilities and Life*, p. 28.

“Events whose probability is extremely small never occur.” — Borel, E. 1965. *Elements of the Theory of Probability*, p. 57.

— Editor

capable of being produced by a typewriter. On the relative top of the incline is the sublime prose of Shakespeare. Ruse’s suggestion of a cosmic teacher with Shakespeare’s text and a bottle of white-out implies that natural selection inexorably, step by step marches only in the direction of the optimal design.

But the more realistic picture is that of a “fitness terrain,” where words are mounds, sentences are hills, and prose is a mountaintop. In between are valleys of misspelled words, canyons of improperly punctuated sentences, and ridges of nonsense sentences. The cosmic teacher only whites-out the worst efforts of the monkeys, letting some get “stuck” with a word or two, even though it does not yet even make a sentence.

### No guarantees

Secondly, there is no guarantee that “one does not lose what has already been typed.” While the monkeys are busy typing away, there are multiple forces working against them, like a bad accident (mutation) jamming a typewriter, or random natural destruction extinguishing the whole project.

Thirdly, Ruse ignores the challenge of polygeny. “Selection simply cannot see

genes and pick among them directly. It must use bodies as an intermediary... Hundreds of genes contribute to the building of most body parts and their action is channeled through a kaleidoscopic series of environmental influences... Parts are not translated genes, and selection doesn’t even work directly on parts. It accepts or rejects entire organisms because suites of parts, interacting in complex ways, confer advantages.”<sup>5</sup>

### A generous selection mechanism

I would propose another variation on the monkey story in order to more realistically take into account the play of natural selection. Suppose that the monkeys were randomly typing at computer workstations equipped with advanced word processing instead of typewriters. The word processing application is not only capable of spell-checking and punctuation-checking, it automatically eliminates the mistakes in spelling and punctuation! Thus, the primates would slowly produce words and, if they were lucky enough to type a sentence, the punctuation would be perfect.

This modification (a generous selection mechanism) would improve their odds tremendously. However, they are still left with the “fitness hill” problem. That is, they might produce words that satisfied the system yet did not make sentences (no grammar check). Moreover, computer crashes and viruses could wipe out promising attempts or even the entire system!

Some have countered that my scenario is unrealistic since prose poorly models genetic encoding. For example, one can change a single letter in a word and you usually destroy its meaning, whereas a change in an amino acid usually does not prevent the protein from performing its function. Also the gene order, it is argued, is unimportant in the genome.

### Three probability problems

There are three probability problems that should be modeled here. First, the whopping unlikelihood of a truly beneficial mutation that adds **new** information which then becomes the basis for an evolutionary novelty. Secondly, assuming that sufficient of these mutations can be observed over the course of time so that we can accurately determine the odds, we move on

to Haldane's Dilemma and the cost-of-mutation problem.

That is, since by anyone's calculation the great majority of mutations are deleterious, can the population reasonably bear the cost of removing these through differential survival? And what is the impact of harmful mutations on the reproductive capacity along the way? To simultaneously substitute numerous genes in a generation, evolution requires a very fortuitous set of reproductive circumstances.

Thirdly, assuming the positive mutations keep occurring and the population can continually produce the enormous host of specimens that must march off to genetic death, then we can finally get to Gould's polygeny and Behe's "Irreducible Complexity." What then are the odds that a whole system can simultaneously be put into place so that it can actually be selected (e.g., an immune system, metamorphosis, sexual reproduction, altruism, etc.)?

Say the odds of getting a "word" models the mutation problem. Then success-

fully dealing with the cost-of-mutation issue could be analogous to producing an intelligent sentence; and obtaining a reasoned paragraph could then model the evolution of an irreducibly complex system. The "poetic sensibility and grammatical complexity" that I mentioned earlier would finally be analogous to the beautifully complex, highly adapted creatures we observe, in which many of these systems ultimately work together in exquisite symmetry.

Does this scenario solve the monkeys' probability challenge with the sonnet? Let's rework the calculation using ReMine's assumption that we have as many monkeys as protons in the observable universe. Furthermore, let's upgrade the monkeys' skills to typing a miraculous 500 random words per minute (while generously having the "nonwords" removed, and mercifully being spared system crashes) around the clock for 20 billion years. There are 114 words in Shakespeare's famous sonnet *When in Disgrace with Fortune and Men's Eyes*. To provide a source

of correctly spelled words, we can assume a "spellchecker" with 75,000 words. Then the probability of typing, in order, all the sonnet's words is just one chance in  $75,000^{114}$  or  $5.77 \times 10^{555}$ . This would require  $4.1 \times 10^{412}$  universes *more than* the ReMine illustration above to have an even chance at succeeding!

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## Distinctions ...

...continued from page 1

Jay Gould has been particularly candid, pointing out that the primary characteristics of the fossil record are sudden appearance (creatures appearing fully formed) and stasis (creatures typically exhibiting little or no change), and that the idea that actual creatures bridged the gaps is inference. Gould's colleague, Niles Eldredge, writes:

"No wonder paleontologists shied away from evolution for so long. It never seems to happen ... Evolution cannot forever be going on somewhere else. Yet that's how the fossil record has struck many a forlorn paleontologist looking to learn something about evolution." (1995, p. 95)

David Raup, one of the world's most respected paleontologists, provides additional insight:

"A large number of well-trained scientists outside of evolutionary biology and paleontology have unfortunately gotten the idea that

the fossil record is far more Darwinian than it is. This probably comes from the oversimplification inevitable in secondary sources: low-level textbooks, semi-popular articles, and so on. Also, there is probably some wishful thinking involved. In the years after Darwin, his advocates hoped to find predictable progressions. In general, these have not been found — yet the optimism has died hard, and some pure fantasy has crept into textbooks." (1981, p. 289)

Orr and Coyne write: "We conclude — unexpectedly — that there is little evidence for the neo-Darwinian view: its theoretical foundations and the experimental evidence supporting it are weak." (1992, p. 726) In sum, the successes of the Neo-Darwinian synthesis "are limited to the minutiae of evolution, such as the adaptive change in coloration of moths; while it has remarkably little to say on the questions which interest us most, such as how there came to be moths in the first place." (Ho and Sanders, 1979, p. 589)

Of course, evolutionists might argue

that these criticisms only apply to neo-Darwinism (Darwinism as modified by the findings of modern genetics), not to the fact of evolution. On this point Johnson writes:

"We can point to a mystery and call it evolution, but this is only a label. The important question is not whether scientists have agreed on a label, but how much they know about how complex living beings like ourselves came into existence." (1993, p. 10)

## The biochemical level

A second problem is that it seems quite unclear how evolution could have occurred at the biochemical level (see Behe, 1996). James Shapiro (1996) writes:

"There are no detailed Darwinian accounts for the evolution of any fundamental biochemical or cellular system, only a variety of wishful speculations. It is remarkable that Darwinism is accepted as a satisfactory explanation for such a vast subject — evolution — with so little rigor-

ous examination of how well its basic theses work in illuminating specific instances of biological adaptation or diversity.”

Research suggests that only about 9 percent of people in the U.S. accept the “central finding of modern biology” that evolution from microbes to humans occurred, and through a random, purposeless, impersonal process (see Sagan, 1996, p. 327). Some evolutionists will continue to insist that the remaining 91 percent are ignorant (ignorant, stupid, insane, or wicked, according to R. Dawkins, 1995); others will continue to acknowledge the distinctions between the scientific fact of evolution and the scientific theory of evolution.

### Distinguishing fact from theory

In summary, the term “evolution” is ambiguous in that it is used to refer to both scientific fact and scientific theory (a theory that enjoys less than compelling empirical support). Evolution is a central idea that cuts across many scientific disciplines, and it is important that students be familiar with the term. However, students should also learn to think critically about the

available evidence so that they can distinguish between the proven fact that creatures change and the theory that all creatures could have evolved from a common ancestor. Neither science nor education is advanced by the current lack of distinction between these ideas.

We recommend that NKU’s Faculty Senate reject the evolution statement approved by the PCC, rather than endorse use of a term that promulgates continued misunderstanding. Further, it is our recommendation that, as an educational and research institution, NKU should be a leader in clarifying the controversy. In doing so, it should provide definitions to the educational community for: 1) the scientifically proven adaptive evolution and 2) the theory of evolution. Further, it should encourage public educators to teach students how to think critically about this and other important issues, and to develop an appreciation of scientific inquiry.

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*Professors George Aldhizer, Gary Johnston and Douglas Krull are members of the NKU (Northern Kentucky University) Professional Concerns Committee of the Faculty Senate. This is an adaptation of a minority opinion they wrote taking exception to the senate's position urging use of the word "evolution" in state curriculum guidelines.*

## A Probably Fraudulent Dinobird: What Shall We Make of It?

by David Bump

For those of you who haven't already heard, the title refers to the case of a fossil named *Archaeoraptor liaoningensis*, and the fraud has led to the embarrassment of no less an institution than the National Geographic Society.

If you would like further background on the current state of evolutionary thinking about the evolution of birds from dinosaurs, and why the data do not actually support this view, I recommend a visit to the online document “On the Alleged Dinosaurian Ancestry of Birds.”<sup>1</sup> For now, I can only say that there are a number of fossils that evolutionists claim are transitional, or at least show the transitional steps required. For most of them, the argument is over; birds are dinosaurs. They're wrong, of course, but if you still

imagine the evolutionary scenario by picturing a creature that's a chicken in front and a lizard in back, you've got a lot of updating to do.

### Best illustration yet

And yet that is relatively close to what fooled the National Geographic Society, and the respected scientists Stephen Czerkas, Philip J. Currie, and Xing Xu. As told in *Science News*,<sup>2</sup> it began with the announcement at a press conference in October 1999. *Archaeoraptor liaoningensis* was presented as the best illustration yet of a dinosaur evolving into a bird; not able to fly well but probably getting off the ground a bit. The society's magazine also had a related story in November, “Feathers for T. rex?”<sup>3</sup> Apparently, the society hoped this fossil would truly end the debate once and for all.

I must say that my personal reaction at the time was rather ho-hum. Although some primitive features were claimed for the forepart of the fossil, it was clearly the dinosaurian tail that was the most exciting feature. However, judging from the pictures of the fossil in natural and UV light,<sup>4</sup> the tail bones did not seem especially heavy or developed for attachment of heavy muscles. Of course, it was difficult to judge by pictures of the size and quality available to me, yet the picture of their own “sculptor's depiction” of the creature in life appeared to me as indistinguishable from *Archaeopteryx*, the first-discovered primitive bird.

### A dubious background

At any rate, it apparently was worth a good deal of fanfare to the researchers who discovered it. Ah, but therein lies the



trouble. It was **not** discovered by scientists *in situ*, but rather it was smuggled out of China and bought by a researcher (technically, by the museum where Czerkas works) in Utah. This sort of background alone would be enough for evolutionists to dismiss it if it were something presented by a creationary scientist. In this case, there was yet another problem, for as Monastersky notes, the researchers “had concerns about the tail because the bones connecting it to the body are missing and the slab shows signs of reworking.”<sup>2</sup> These concerns were hardly mentioned, if at all, until after the bad news broke.

It’s not as if the National Geographic Society and the researchers involved weren’t given any warning. The curator of birds at the Smithsonian wrote an open letter<sup>5</sup> critiquing the way the contraband fossil had been presented, the name put in print before a proper research paper was published, and the way the dinobird scenario was being pushed.

Neither the Society nor the researchers seem to have voiced any doubts or concerns until recently when, as Monastersky reports,<sup>2</sup> one of the researchers was examining a fossil dinosaur and decided its tail looked exactly like the one on *Archaeoraptor*. Apparently, it had split upon excavation, and the other half had been attached to a fossil of a primitive bird to boost the price. That “specimen” then

became *Archaeoraptor*, the fossil which three respected scientists and the National Geographic Society had presented as a shining example of a dinobird.

### Don’t gloat

So that’s the story. What are we to make of it? I think we should avoid gloating over this too much. First, there are several other fossils which are claimed to illustrate this transition. Secondly, the evolutionists can always say, once again, that it shows the self-correcting nature of science. Thirdly, there may still be something salvaged from this, such as claiming the dinosaur from which the tail came had feathers, or that the bird part of the fossil is especially primitive. And finally, the tail has not yet been **proven** to belong to another fossil. Certainly this case will not cast any doubt into the minds of the true believers in the evolution of birds from dinosaurs.

On the other hand, this clearly shows the zeal with which the dinobird scenario is being supported. We might well ask, if a smuggled fossil can be used this way and the possibility of fraud so easily overlooked or dismissed, what other errors have been made? How much consideration has been given to the possibility that “feathers” on dinosaurs were some other sort of covering or effect of the fossilization process? Were certain factors em-

phasized and others ignored in order to classify strange creatures as dinosaurs rather than flightless birds, or even as an entirely different kind of animal? Many similar challenges may be raised.

The supporters of the dinobird scenario may feel that nothing has changed after this fiasco, but creationists and evolutionists supporting an alternate theory may well be encouraged in telling them that they are far from proving their case.

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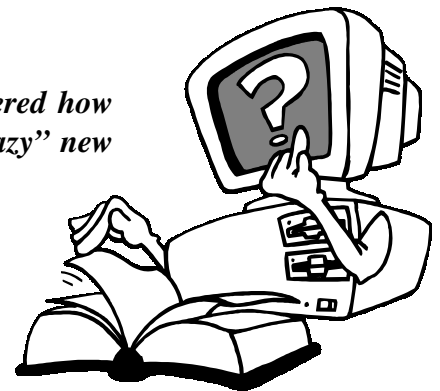
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3. Sloan, C.P. 1999. Feathers for T. rex? *National Geographic Magazine* (November). [It should be noted that it was only claimed that it was probable that *hatchling* and juvenile tyrannosaurs had *downy* feathers.]
4. See <http://www.nationalgeographic.com/events/99/feather/index.html> and also Monastersky, Ref. 2.
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## What Are Creationists Thinking about ...?

*As new scientific discoveries make the headlines, have you ever wondered how your fellow creationists are reacting? Have you ever thought of a “crazy” new idea about origins and wanted to bounce it off another creationist?*

Now you can keep in contact daily with creationists from all around the world. The Creation Research Society sponsors **CRSnet**, an online community of CRS members who have e-mail access to the Internet. Not only do participants discuss the latest scientific findings related to origins, but they also receive news about the CRS — its research, publications, and activities — and other creation-related news.



For more information, send an e-mail message to Glen Wolfrom at [contact@creationresearch.org](mailto:contact@creationresearch.org).  
*Participation is limited to CRS members in good standing.*

# Creation Calendar

**Note:** Items in "Creation Calendar" are for information only; the listing of an event does not necessarily imply endorsement by the Creation Research Society.

March 4-5

*Creation Talks* by Dr. Don DeYoung  
Bethel Brethren Church, Berne, IN  
Contact: Pastor Joseph Nass (219)589-3381

March 18

*Science Ridicules Evolution & Confirms Genesis* by Dr. J. Mastropaolo  
Bible Science Assoc'n, San Fernando Valley Chapter  
7:00 pm, Our Saviour's Lutheran Church, Granada Hills, CA  
Contact: Mark Armitage (626)815-6000 x5519, marmitage @apunet.apu.edu

March 21

*Cosmic Evidence for Creation (Design) & Catastrophism* by W. Stillman  
Creation Science Fellowship, Pittsburgh, PA  
7:30 pm, Mars CM&A Church, Mars, PA  
Contact: (412)341-4908; csf@trfn.clpgh.org

March 31 and April 1

*Creation vs Evolution* by Dr. Kent Hovind  
Albert Lea Sr. High Auditorium, Albert Lea, MN  
Southern Minn. Association for Creation  
Contact: Bryce Gaudian (507)256-7211, aerialhelp@vanladder.com

April 15

*An Evolutionist Corrects a Creationist* — Debate  
Bible Science Assoc'n, San Fernando Valley Chapter  
7:00 pm, Our Saviour's Lutheran Church, Granada Hills, CA  
Contact: Mark Armitage (626)815-6000 x5519, marmitage @apunet.apu.edu

April 18

*Living Things as Evidence for Creation* by Dennis Wert  
Creation Science Fellowship, Pittsburgh, PA  
7:30 pm, Mars CM&A Church, Mars, PA  
Contact: (412)341-4908; csf@trfn.clpgh.org

April 28-30

*Creation Talks* by Dr. Don DeYoung  
Grace Brethren Church, Martinsburg, PA  
Contact: Pastor Jim Laird (814)793-2513

April 28-30

*Karst, Castle, and Cave Crawl Weekend*  
CSA for Mid-America (Kansas City area)  
Contact: Tom Willis (816)618-3610; csahq@juno.com

May 16

*Geological Evidences for Creation and the Flood* by Chuck Danley  
Creation Science Fellowship, Pittsburgh, PA  
7:30 pm, Mars CM&A Church, Mars, PA  
Contact: (412)341-4908; csf@trfn.clpgh.org

May 18

*Workshop: Winning Debates Against Evolutionists* with Dr. Duane Gish  
**Attendance limited to members of the Creation Research Society**  
Registration fee — \$40 (\$10 discount if paid before May 1); mail fee to:  
Dr. David Kaufmann, 3745 NW 7th Ave., Gainesville, FL 32607  
Contact: Dr. David Kaufmann (352)378-9112, kaufmann@hotm.com

May 19-20

*Creation Research Society Annual Board Meeting*  
Atlanta, Georgia

May 20

*Field trip and presentation*  
Azusa Pacific Electron Microscopy Facility  
Bible Science Assoc'n, San Fernando Valley Chapter  
1:00 pm, APU Graduate Campus, Mary Hill Center, Azusa, CA  
Contact: Mark Armitage (626)815-6000 x5519, marmitage @apunet.apu.edu

May 27-29

Kansas Chalk Monuments, Museums, and Fossil Beds  
CSA for Mid-America (Kansas City area)  
Contact: Tom Willis (816)618-3610; csahq@juno.com

June 20

*Evidence for a Young Earth* by Jeff Lawther  
Creation Science Fellowship, Pittsburgh, PA  
7:30 pm, Mars CM&A Church, Mars, PA  
Contact: (412)341-4908; csf@trfn.clpgh.org

June 22-24

*Design and Its Critics* — speakers include:  
Drs. Michael Behe, William Dembski, Paul Nelson, et al.  
Concordia Univ. Of Wisconsin, Mequon, WI  
Contact: Dr. Angus Menuge (262)243-4249; Angus.Menuge@cuw.edu

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