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## Creationism After Aguillard

In 1987, the U.S. Supreme Court decided in *Edwards v Aguillard* that it was an unconstitutional establishment of religion for the state of Louisiana to require that scientific creationism be taught whenever evolution was taught. Creationists quit trying to pass legislation mandating scientific creationism, but they have not ceased trying to promote creationism in the classroom and/or banish evolution.

NCSE held a symposium entitled "After *Aguillard*: Creationism Continues" in New Orleans on February 17 in conjunction with the annual meeting of the American Association for the Advancement of Science. The symposium attracted an enthusiastic audience that included CC liaisons from across the country. Also present were two defendants in the Louisiana case, NCSE Supporter Dr. Milton Fingerman and Dr. Donald Aguillard.

Fingerman and Aguillard were introduced, and they received a warm round of applause. Speaking off the cuff, Aguillard noted that the battle for good science education is far from won. For example, some Louisiana school districts recently adopted textbooks of appalling quality. Aguillard said we must continue to work at every level, and he congratulated NCSE for its leadership.

The formal symposium program featured four experts on the creation/evolution controversy who discussed how creationism has evolved since the Supreme Court decision.

### Creation Politics

Michael Hudson, Vice President and General Counsel for People for the American Way, gave the first presentation, entitled "Creation Politics." Hudson, who has been involved in battles for quality

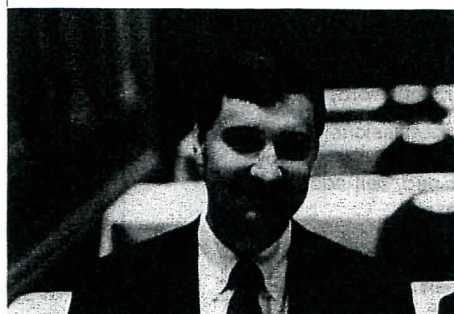
science texts in Texas and California, called the struggle against the adverse effects of creationism a "basic political battle." This poses a problem, because politicians do not understand science and scientists do not understand politics.

Why are creationists, even after the *Aguillard* decision, still successful in their political ploys? In part, because both religion and science fail to debunk the false dichotomies of believers vs. nonbelievers and evolution vs. creation. Also, religious leaders, scientists, and science educators often hesitate to "dirty their hands" in political participation against the creationists. Parents and ordinary taxpayers are sometimes hard to motivate.

Many claim that the creation issue was resolved in science years ago, but this overlooks the vast public ignorance of science and plays into creationist hands. As a result, science teachers are under siege on the local level, and the publishing industry, whose bottom line is selling books, does a balancing act between economic security and scientific honesty.

Hudson suggested several ways to help fight this political battle.

*continued, p. 2*



Donald Aguillard



## NUCLEUS

- Mobilize public policy makers.
- Get scientists concerned and involved.
- Encourage mainstream clergy to talk about creationism from the pulpit and break down the false dichotomy of "belief in creation or belief in evolution."
- Work to improve scientific literacy and public understanding of the history and philosophy of science.
- Continue to review science textbooks and get involved in their selection.

We should aim to relegate creationism to its proper realm — with flat-earthism, astrology, and other pseudosciences.

### The Legal Aftermath of *Edwards v Aguillard*

Attorney Gary Crawford of Skadden, Arps, Slate, Meagher, and Flohm spoke on "The Legal Aftermath of *Edwards v Aguillard*." Crawford helped fight the *McLean v Board of Education* case in Arkansas, but his involvement in the battle against creationism actually began in 1974, when Tennessee passed a law requiring the teaching of Biblical creationism along with evolution.

The 1974 Tennessee law was explicitly religious, and it was beaten easily. The Arkansas law and (especially) the Louisiana law took a more sophisticated approach developed by creationist attorney Wendell Bird. The Louisiana law finally went to the Supreme Court as *Edwards v Aguillard*; the court ruled that creationism is religion and not science.

The Supreme Court decision has not stopped creationism. In a more recent case, Illinois teacher Ray Webster was found teaching creationism to his 7th grade class. Webster's religious motivations were not well hidden. He put religious pamphlets on the bulletin board, and he disciplined students by making them memorize quotations from Proverbs. When the school board told Webster not to teach creationism, he sued, claiming that his rights were violated.

Webster's case was thrown out on the basis of an exchange of letters between him and the school board. Essentially, the board told Webster that the Supreme Court had ruled that creationism is not science but religion, and Webster was not to teach religious ideas in his classroom. Wendell Bird was involved in the case, and it is presently under appeal, but Crawford thinks Bird

doesn't have a prayer on this one. Indeed, Bird is known to be seeking a more promising test case to fight.

Meanwhile, creationists are busy stripping the religious references from their stuff. At some point, they may succeed in getting some version of it into a school. But what is taught in the schools should be determined on secular grounds. If the purpose for which such a body of material is introduced is to support a religious view, it is unconstitutional even when cleansed of religious references.

### Church-State Relations After *Edwards v Aguillard*

Dr. James Wood is head of the Institute of Church-State Separation, at Baylor University, a Southern Baptist institution in Waco, TX. Dr. Wood's topic was "Church-State Relations After *Aguillard*."

"For more than half century, religious fundamentalists have waged a campaign against the teaching of evolution in the public schools," said Wood. In the first part of this battle, laws against evolution were passed. When these failed, they tried to introduce creationism. The Supreme Court clearly said in the *Aguillard* decision that the public schools are not for sale to zealots. Secular ideas cannot be thrown out of the schools because they conflict with someone's religious convictions.

Later, in a Tennessee case, the courts upheld the right of public schools to select and mandate the use of textbooks that may offend some of the religious views of some parents. The primary issue there may have been integrity of public school education. The courts have affirmed that teaching civil tolerance is a goal of public schools, and they have carefully differentiated civil tolerance from religious tolerance. (Mickey Frost, a plaintiff in the Tennessee case, explicitly rejected tolerance.) The circuit court rejected the claim that texts that contradict religious views are of themselves anti-religious.

Another major defeat for the fundamentalists was their failure to get "secular humanism" declared a religion. In a Mobile County, Alabama case, the court recognized that the fundamentalist attack on the textbooks was based on religion rather than on secular concerns. The court ruled that the disputed books did not advance or inhibit religion.

## Submissions

NCSE Reports needs articles and reports. We especially need short reports on local stories involving evolution education, Committees of Correspondence, or creationist activities. Articles should be submitted double-spaced and typed on one side of the paper with one-inch margins all around.

Computer users, please use a nonproportional 10 or 12 pitch font such as Courier. If possible, include a diskette containing the text. Users of IBM and compatible computers may submit any format 3-1/2" or 5-1/4" diskette with the text in WordPerfect, Microsoft Word, old-fashioned WordStar, WordStar Professional, DCA, or ASCII. Macintosh users may submit text in WordPerfect, Microsoft Word, or ASCII.

No submissions will be returned unless accompanied by a stamped, self-addressed envelope.

Send submissions to:

Robert Schadewald, Editor  
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The public schools have long been made a battleground by those determined to get religion into them, said Wood. The present wave of censorship is directed at wresting the public schools from secular control and Christianizing them. The crucial role public schools play in making ours a secular nation is unacceptable to some.

### Old Wine in New Bottles

Eugenie C. Scott, executive director of NCSE, called her presentation "Old Wine in New Bottles: Creationist Strategy Post-Aguillard" because current creationist strategies are mostly the same old stuff. Creationists really don't care that much about getting creationism into public schools said Scott. What they really want is to get evolution out.

Creationists don't necessarily view the *Aguillard* decision as a big loss. They recognize that the decision was a narrow one, and they take comfort in the phrase "variety of scientific theories." This phrase from the *Aguillard* decision comes up repeatedly in creationist literature. Creationists got the it incorporated in the Texas textbook proclamation, and they used it as an argument in the controversy over the California Science Framework.

A prime strategy is to get "evidence against evolution" into the curriculum. Creationists insist that there are only two possible views, creation (their version) and evolution. Thus, evidence against evolution is evidence *for* creation. This, of course, is the same old "scientific" creationism we have known for years.

While some may claim to advocate nonevolutionary theories independent of creationism, the stock creationist arguments keep reappearing. Thus, advocates of supposedly new, secular theories often claim that all mutations are harmful, that evolution violates the second law of thermodynamics, dust on the moon proves it is young, and so on.

Scott said two important new variants are the Theory of Intelligent Design advocated in *Of Pandas and People* (reviewed in *NCSE Reports* 10(1):16) and so-called Theory of Abrupt Appearance, advocated by Wendell Bird in *The Origin of Species Revisited* (reviewed on p. 22). Both are cleverly packaged, and we will be hearing more about them.

### Co-Founder and Former Editor Are Honored

NCSE honored Jack B. Friedman, one of the founders of NCSE, and Karl D. Fezer, former editor of *Creation/Evolution Newsletter* (now *NCSE Reports*) at the *After Aguillard* NCSE symposium in New Orleans on February 17. Both men were awarded plaques testifying to their contributions to NCSE and the ongoing fight for scientific integrity.

Friedman, a former high school biology teacher in New York, was selected as the Outstanding Science Supervisor in New York State in 1982. NCSE was organized in 1982 at a AAAS meeting in Washington, DC after Jack lobbied strongly for a national organization. He was the second President of NCSE and is currently Treasurer and Historian. He is also founder and President of the New York Council for Evolution Education.

Karl D. Fezer is a professor of biology at Concord College in West Virginia, and the founder of the West Virginia CC. His West Virginia newsletter was of such high quality that he was a logical choice in 1983 to edit the national newsletter. Karl took over the daunting task of replacing Stan Weinberg's "Memoranda to Liaisons of the Committees of Correspondence," published between 1980 and 1983, with the *Creation / Evolution Newsletter*. Beginning in 1984 with vol. 4(1), Karl edited the newsletter for four years. He is on the NCSE Publications Task Force, preparing a newsletter column that will explain common creationist "scientific" arguments.

NCSE is fortunate to have had the contributions of these men during our early days, and to have their continuing advice and assistance. Our appreciation to both!

#### Some of the usual suspects

L to R: Board members Fred Edwards, Jack Friedman, Laurie Godfrey, President John Cole





## Since You Asked ...

John R. Cole  
President, NCSE

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*...convincing most of the public that the ICR is wrong and a bit silly (even dangerous) is more important and effective than stopping their presses or distribution system.*

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How should I react as NCSE president when I am approached by people outraged by the latest creationist exploit and wanting to "nip this thing in the bud" by stopping "them" once and for all? For example, some have recently proposed that NCSE endorse a boycott of publishers whose lists include anti-evolutionist books; and that we denounce public officials who do not agree with us totally or whose actions do not always please us. "*Somebody* has to take a stand," the argument goes.

Well, to some this may sound like a reasonable call to activism.

In practice, however, there are problems. NCSE members do not always agree on tactics, strategies, or even short-term goals. Which members do we write off as "obviously" wrong? Furthermore, we are legally forbidden to lobby in the political arena, although we can certainly advocate better education and oppose bad education. More importantly, our goal of improving science education would be harmed by short-term strategies that might win Pyrrhic victories enroute to losing the long-term war.

I have received several letters asking NCSE to denounce last fall's California Science Framework because last-minute changes were made to placate creationists. Dr. Scott was in fact widely quoted in the press deploring these changes, but she also voiced the NCSE position that the new framework was a victory nevertheless because it recognizes evolution as the cornerstone of biology and much of science.

One correspondent asked me to call for California Superintendent of Education Bill Honig's resignation because he accepted a few lines of changes in the document. To me, this would lead logically to an alliance with the creationists who want to impeach Bill Honig, and I fail to see any value in this. Indeed, I had already written to Honig expressing my disappointment about the changes along with my appreciation for his championing of evolution and good science in this document and elsewhere. In his response, Honig thanked NCSE for helping to get the framework passed and asked for our help in the future. This exchange shows that we are having a positive impact on public officials and advancing our cause.

I believe that correspondents who advocate boycotts of publishers also play into a dead end. Although I completely agree that publishers should be held responsible for their products, praised for good policies, and criticized for bad ones, I am very uncomfortable with even the hint of censorship. If Zondervan Books (a major publisher of "evangelical" titles) began republishing Mark Twain or Moliere in cheap, acid-free, leather-bound editions, and no other publisher was doing this, should I forswear them? I would prefer to influence book sales by convincing the public that antievolution books are silly.

I am a First Amendment absolutist, I guess. On the practical level, it seems to me that convincing most of the public that the ICR is wrong and a bit silly (even dangerous) is more important and effective than stopping their presses or distribution system. I guess I welcome their versions of *Mein Kampf* as public announcements of what we are up against — ideas that we can show to be *wrong*, not simply unpopular with some of us who would like them to just go away.

## Voices for Evolution Praised!

By now, all NCSE members should have received their free copies of our latest publication, *Voices for Evolution*. (If you have not received it, please write to us at Box 9477, Berkeley, CA 94709.)

We are pleased that so many of you have ordered copies as gifts for your libraries or have asked your local library to order copies. It is important that *Voices* be available in every community. Edd Doerr, Director of Americans for Religious Liberty, has said, "...this little book will prove to be a useful resource for defenders of public education and church-state separation.... [It] will be helpful in local or state controversies over attempts to intrude sectarian tenets into public schools or the textbook selection process."

The *Pseudoscience Monitor*, newsletter of the Midwest Committee for Rational Inquiry, an organization that includes the northern Illinois CC, has begun publishing excerpts from *Voices*. They plan to run one per month. We thank them for disseminating information from this book.



## Babylon the Great Is Rising

All persons who regard the entire Bible as literal truth should have great concern over what has been happening in present-day Iraq. Specific Bible prophecies are being defulfilled before our very eyes as the ancient city of Babylon is being rebuilt. Even more to the point, people are now living within the boundaries of the former city. Isaiah chapter 13 and Jeremiah chapters 50 and 51 repeatedly declare, in a variety of vivid expressions, that Babylon will never be rebuilt and will remain desolate and uninhabited forever. The rebuilding is not yet complete, and one might make an issue of this, but the site is hardly desolate, being a beehive of activity and the location of at least two international festivals celebrating the construction so far completed — many of the participants staying in the new Babylon Hotel. There are several villages within the boundaries of the ancient city, which covered a large area. My information comes from an article in *Christianity Today* (Nov. 18, 1988) and a packet of materials I received from the U.S. press office of the Iraqi embassy. None of the latter was in any degree anti-Bible propaganda, and the only reference to prophecy was a minor fulfillment — in the case of the one-time use of the site as a wild animal refuge.

But Jeremiah's declaration covered a much wider area. Jeremiah 25:12 states that the entire land of Babylonia was to become desolate forever. Any detailed map shows this area dotted with towns. Another specific prophecy is that not one stone from Babylon's ruins would ever be used in the foundation of any building (Jeremiah 51:26). It is widely acknowledged, even in writings defending Bible prophecies, that the ruins were raided extensively for materials to build other settlements.

Thus, we see that Babylon did not sink like a stone thrown into the river (Jeremiah 51:63-64); but many prophecies did. Biblical writings are sometimes brilliant, sometimes noble, but always deserving of the same healthy skepticism accorded the greatest human writers.

Wilfred P. Anderson

## More on Law and Theory

In a 1980 paper entitled "Towards a More Realistic View of Science and the Scientific Method," (*American Biology Teacher* 42(4):235-237), L. C. Vigue wrote as follows:

One of the basic concepts stressed in introductory science courses is the scientific method. We are taught, and we continue to teach our students, that science proceeds from observation (step 1) to hypothesis formation (step 2), to hypothesis testing or experimentation (step 3), to theorization (step 4), to further experimentation (step 5), and finally to formation of a law (step 6).

This quotation illustrates not only the mistaken notion that good theories eventually become laws but also the second mistaken notion (that the creationists latch onto) that the scientific method is restricted to laboratory experimentation!

In this same paper Vigue also claims that Darwin's theory is untestable:

Darwin's theory is an example of a hypothesis that can never be proven in its entirety because it deals with unwitnessed events that occurred in the distant past.

But this is true of all laws and hypotheses. They cannot be absolutely proven true. And all theories postulate explanatory mechanisms that cannot be directly observed! (If they did and the mechanisms were observed, they would no longer be theoretical, but they would become additional observed phenomena.)

Frank J. Sonleitner

## Confused Terminology Equals Confused Education

I suggest that readers of *NCSE Reports* discuss law, hypothesis, fact, principle, and generalization and related terms in a series of articles to learn whether it is possible to find meanings that would be acceptable to all science educators. (See Sonleitner (NCSE Reports 9(6):3-4, 1989.)

To start this exchange, I will state a meaning for *theory*. A theory is a nearly geometric pattern of reasoning. Central to each theory are a few ideas stated in the postulates (basic premises, funda-

## LETTERS

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*...the mistaken notion  
that good theories  
eventually become  
laws...*

---



mental assumptions; usually five to nine in number). Lines of reasoning build a pattern in three ways. (1) They use facts to support a postulate. (2) They use facts and postulates to explain known facts. (3) And they use facts and postulates to predict possible new facts.

This definition of *theory* grew out of decades of study that I will describe and reference in a future article for critics who think this view of theory is not a proper one.

If a hypothesis is a tentative theory, it will have the same structure as a theory. There will be a set of postulates and lines of reasoning that involve facts and postulates. One statement cannot be either a hypothesis or a theory; both are systems of statements.

But the term *hypothesis* has other meanings in common usage. Hypothesis may also mean a deduction, a postulate, a loose notion, or an extrapolation. The different meanings of the term are so common that it should be omitted from general science courses. If *tentative theory* is what is meant, this term should be used.

When one studies many theories and recognizes in each theory the postulates-support-explanation-prediction pattern structured by lines of reasoning, one begins to see in clearer form the logical structure of established knowledge. And when clearly seen, the theory structures suggest better ways of teaching science — ways that move classroom science somewhat closer to the real science that produced the textbook knowledge.

Ralph W. Lewis  
College of Natural Science  
Center for Integrative Studies  
Michigan State University

## Erroneous Citation

I believe you have a mistaken citation in *NCSE Reports* 9(5):8. The April '89 *Impact* does not refer to radiometric dating of Grand Canyon lavas nor does it mention Steven Austin. I would love to get hold of the correct issue of *Impact* to help me in my encounters with creationists.

Wilfred P. Anderson  
*Would you believe April 1988? Sorry about the error. Editor.*

## Good Faith at ICR

I would like to point out some oddities in recent issues of *Acts & Facts*. The first is a statement by Henry Morris (in the January 1990 insert letter) that ICR can still in "good faith and conscience" encourage students to enroll in their graduate school for science education *in a distinctively creationist context* [emphasis added]. I understood (perhaps misunderstood) that ICR had agreed to remove (or at least tone down) its creationist "interpretations" from the graduate school to be eligible for approval. If so, how can the graduate school still offer a "distinctively creationist context"?

Another item relates to ICR's frequent assertion that they are always careful to distinguish between "scientific creationism" and "Biblical creationism." If so, I'd like to know what they mean by "scientific Biblical creationism" (p. 3 of the January *Acts & Facts*).

Finally, the February *Acts & Facts* implies ICR still has a good chance of getting the graduate school approved, but in an insert (dated January 17 and labeled a "news release"), ICR heaps abuse on Superintendent Honig. That doesn't seem like the best way to increase their chances.

Glen Kuban

## E-Mail CC Directory

I would like to organize a directory of all CC members and *NCSE Reports* readers who have access to electronic mail (known colloquially as "e-mail"). The main purpose of this directory is to exchange time-critical information about creationist debates and seminars that could be useful to someone involved in a debate only a day or two later somewhere else. Anyone with an e-mail account can mail me at user id **rpjday@ccu.Umanitoba.CA**. Please include a few lines of personal information (for example, full name and academic affiliation if any). I will collect all addresses and send the directory back to all correspondents.

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Bowie, J. U., J. F. Reidhaar-Olson, W. A. Lim, and R. T. Sauer, "Deciphering the Message in Protein Sequences: Tolerance to Amino Acid Substitutions." *Science* 247:1306-1310 (1990). Experimental evidence has shown that proteins are surprisingly tolerant of amino acid substitutions. Many different sequences give rise to proteins with the same structure and activity.

Brush, Stephen G., "Prediction and Theory Evaluation: The Case of Light bending." *Science* 246:1124-1129 (1 December 1989). Using Einstein's work as an example, Brush argues that, in the real world of science, a genuine prediction (light bending) is not necessarily accorded more weight than simply accounting for known but unexplained phenomena (advance of Mercury's perihelion).

Eve, R.A. and D. Dunn, "Psychic Power, Astrology and Creationism in the Classroom?" *American Biology Teacher* 52(1):10-21 (1990). Results of a survey of life science and biology teachers that shows "sufficient levels of pseudoscientific belief (especially Biblical literalism) among high school life science and biology teachers to warrant significant concern." (Available through NCSE Resource Center; send legal size SASE with \$.45 postage.)

Gould, Stephen Jay, "An Earful of Jaw." *Natural History*, March 1990, pp. 12-23. A review of the evidence showing how reptilian jaw bones ended up in mammals' ears. Gould is acutely aware of the nonsense creationists promulgate about this transition, and he refutes it in detail. Valuable and quotable material.

Gould, Stephen Jay, "Men of the Thirty-third Division." *Natural History*, April 1990, pp. 12-24. The enigmatic title refers to Eugene Dubois's theory of cranial capacities, which eventually led him to conclude that Java Man belonged to "a gigantic genus allied to the gibbons, however superior to the gibbons on account of its exceedingly large brain volume and distinguished at the same time by its faculty of assuming an upright attitude and gait." Dubois also insisted to the end that Java Man was "the real 'missing link.'" Duane Gish, take note!

Grieve, R. A. F., "Impact Cratering on the Earth." *Scientific American* 262(4):66-73 (April 1990). The geological evidence discussed in this paper indicates that creationists would have to accept a minimum of 120 post-Flood meteorite impacts, some producing craters 10 to 100 times greater than Barringer Crater in Arizona.

Hermes, J. D., S. C. Blacklow, and J. R. Knowles. "Searching Sequence Space by Definably Random Mutagenesis: Improving the Catalytic Potency of an Enzyme." *Proceedings of the National Academy of Science USA* 87:696-700 (1990). Experiments show that improving the catalytic activity of enzymes by random mutagenesis and natural selection is quite feasible.

Lau, K. F. and K. A. Dill, "Theory for Protein Mutability and Biogenesis." *Proceedings of the National Academy of Science USA* 87:638-642 (1990). Computer modeling of protein folding has shown that large numbers of amino acid sequences code for the same protein structure and function. The authors discuss the relevance of this to creationist calculations of the probability that a particular functional protein could arise by chance.

Mohlenbrock, Robert H., "Tom Miner Basin, Montana." *Natural History*, December 1989, pp. 14-16. Recent work at Mount St. Helens by Georgia State University geologist William J. Fritz suggests that the stacked fossil forests near Yellowstone may have been deposited by mud flows associated with ancient volcanic eruptions rather than having grown in place. Creationists (e.g. Harold Coffin) have made similar suggestions.

Noonan, David, "Dr. Doolittle's Question." *Discover* 11(2):34-44 (February 1990). A nice profile of Russ Doolittle focuses on his career-long search for the evolutionary origin of blood clotting.

Tuttle, Russell H., "The Pitted Pattern of Laetoli Feet," *Natural History*, March 1990, pp. 61-65. Mary Leakey's famous fossil hominid footprints have a companion trackway a mile away that may have been made by a bear.

## RESOURCES



## CC UPDATE

### Current Liaisons

The following is a list of current NCSE liaisons. Liaisons head or represent Committees of Correspondence (CCs), or in other ways support evolution education, the public understanding of science, and the opposition to sectarian influences in science classes. We depend on them for information on challenges to science education at the local level, and we help them to oppose these challenges.

Some CCs are very active, producing newsletters and corresponding among active members, much as did the original Revolutionary War Committees of Correspondence. Other liaisons need your help to make their CC become more active and vigorous. Not all NCSE members belong to their local CC. Your liaison needs your support at the state and grass-roots level. Write him or her today! There can be more than one liaison in a state, so contact NCSE if you are willing to serve.

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## Iowa Committee of Correspondence Plans Symposium on Public Understanding of Science

An all-day symposium on the subject, "Understanding Science and its Human Impact," is planned for Saturday, May 5, 1990, 9:00 am to 3:45 pm, at Des Moines Area Community College (DMACC). The symposium is aimed at all education levels, the general public, and teachers. The site is the DMACC auditorium in Building 6 on the Ankeny campus.

Five speakers from out-of-state are nationally known:

- Dr. Francisco Ayala, geneticist, University of California at Irvine.
- Dr. Michael Ruse, Professor of Philosophy at Guelph University in Canada and witness at the 1981 Arkansas creationism trial.
- Dr. Davis Young, Professor of Geology, Calvin College, Michigan; author of *Christianity and the Flood* and *Christianity and the Age of the Earth*.
- Dr. Michael Zimmerman, Associate Dean and Professor of Biology, Oberlin College.
- Madeline Nash, senior science and technology correspondent for *Time* magazine.

Speakers from Iowa include the current and past presidents of IAS.

The Iowa CC has previously conducted various institutes, workshops, and in-service courses. This symposium, financed by private contributions, foundation support, and existing resources of the CC, is a continuation of these activities. If the symposium is successful, it will serve as a prototype for similar but smaller meetings in communities throughout Iowa. CCs from several neighboring states will be represented at the Iowa symposium, and some may undertake to develop similar meeting in their own jurisdictions.

For more information, contact Dr. Alan Copsey, Biology Department, Central College, Pella, Iowa 50219.

## Thanks from Idaho

Terry L. Gilbert  
Idaho Education Association

*Editor's note: The following is excerpted from a letter to NCSE Executive Director Eugenie Scott.*

I continue to read your name in national education publications. More importantly, I continue to deeply appreciate the work the NCSE is doing on behalf of enlightened science education.

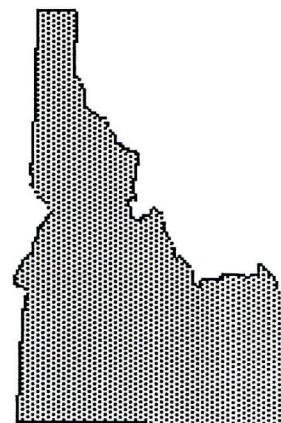
The role of the NCSE in providing funds and advice as we tackled the issue of evolution vs. creationism in Twin Falls some months back was key to our ability to influence the school board to pass an appropriate policy on the issue.

As you may remember, the issue was joined when the editor of the *Times-News* requested that the teaching of creationism at one of the junior high schools be stopped and that the board pass a policy on the issue. The issue was one of the hottest we have seen here in a good long while, prompting many letters to the editor in support of creationism.

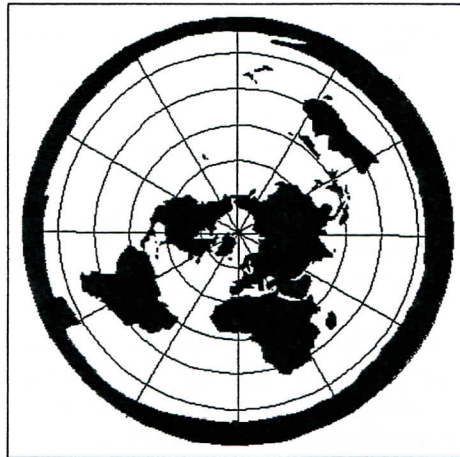
As a regional director for the Idaho Education Association, I became involved in various ways, one by contacting NCSE for advice and some funds with which to bring in two scientists from the University of Idaho and Brigham Young University, both members of the Church of Latter Day Saints. The colloquium we sponsored achieved prominent coverage in the media and threw the other side on the defensive from which they never really recovered.

We also achieved some national prominence when *NOVA* included Twin Falls in its treatment of the subject of evolution and creationism.

Since both of us work in education as our life's calling, I am sure we share a sense of defeat and depression from time to time, mixed with terror and momentary elation. Well, as one educator to another, let me say again to you and NCSE, thank you for all you do and your sense of mission and dedication. Your work let me experience "momentary elation" here. Keep up the good work, Eugenie.







## Restoring Sanity to the World

copyright Robert J. Schadewald, 1990

Most readers do not know that the Flat Earth Society's mission statement is simply, "To restore sanity to the world." Surely the world can use some sanity, I thought, as my wife Wendy and I drove from her parents' winter home in Desert Hot Springs to Flat Earth Society headquarters just outside of Lancaster, California. My old friend Charles Johnson has been president of the Flat Earth Society for about two decades, and the world does seem a saner place now than when he took over.

Charles and Marjory Johnson have a hillside cabin near Saddleback Butte State Park, overlooking Lancaster. Situated on five acres of Joshua trees and greasewood, their high-desert home also serves as Flat Earth Society headquarters and, at election time, polling place for the local precinct. Regular dinner guests at "The Old Chateau Abbey" include seven dogs, two cats, a dozen or so bantam chickens, a large flock of sparrows, and a pair of ravens that literally drops in every day at feeding time.

For some reason, many people think the Flat Earth Society is a joke. Let me assure everyone that Charles Johnson is on the level. The Flat Earth Society is, he says, the oldest organization on earth, having been founded by Moses in 1492 B.C. Scholars gener-

ally agree that the Bible is a flat-earth book from Genesis to Revelation, and many early Christian churchmen vigorously attacked the heathen sphere. In A.D. 1492, an intrepid flat-earthier named Columbus sailed straight across the flat sea to discover America. The powers that be have always been flat earthers; indeed, the United Nations seal includes the official flat-earth map of the known world.

While Johnson eschews the Bible-thumping that has usually characterized the modern flat-earth movement, he does consider the spherical hoax part of a plot to discredit the Bible. If flat earthism has its religious implications, so does sphericity. Johnson claims that sphericity is a doctrine of the Church of England, which is behind the spherical hoax. Indeed, not just sphericity, but even heliocentricity really was a doctrine of the Pythagorean religion, and that almost two millennia before it was generally accepted. Johnson therefore refers to the theory of Copernicus (sorry, "Copernicious") as "Grease Ball Religion." Add a few bugs crawling out of a swamp (evolution), and you get "Buggy Spinning Balls Religion."

The Johnsons are (as English-speaking flat earthers always have been) staunch creationists. I therefore asked Charles Johnson about the new California Science Framework that mandates the teaching of evolution in



"creation science." He immediately fingered Henry Morris as the culprit.

"If it weren't for Morris and his gang," Johnson said, "they could teach creation in the schools. 'Some people think the universe and all forms of life were created.' That's it. That's all that needs to be said. But Morris wants to argue over how many hours were in a creation day, he wants all this *science*, and that has ruined everything. Morris wants to get in one version of religion and quote scriptures all the time."

Johnson utterly rejects Morris's "creation science." He claims no one knows anything about the how or why of creation. Also unlike Morris and his followers, the Johnsons do not reject kinship with animals. To the contrary, they embrace it. "We *are* monkeys," Charles Johnson says, "but we didn't descend from monkeys." Consistent with this view, Charles and Marjory Johnson feed animals rather than eating them; both are ethical vegetarians.

Morris and Johnson have never seen eye-to-eye. Charles Johnson had just taken over the Flat Earth Society when he heard that Henry Morris was starting an organization in San Diego to promote a Biblical world view. Johnson immediately wrote and offered to cooperate. Morris, who insists the Bible depicts a spherical earth, brushed him off. Later, Johnson got an encouraging letter from Jerry Falwell. Soon afterward, Henry Morris appeared on Falwell's TV show, and Johnson got no further encouragement from Falwell. He thinks he knows why.

I had hoped to get Charles Johnson's reactions to recent events in Eastern Europe, Pat Robertson's run for president, the fall of Jim and Tammy Bakker, and several other topics. Unfortunately, soon after lunch the Johnsons were notified of a family emergency, so we cut our visit short.

As we headed back to Desert Hot Springs, and Saddleback Butte receded into the distance across the flat floor of the Mojave Desert, I thought about Charles Johnson and restoring sanity to the world. While I reject his Biblical cosmology, Johnson's view of how creationism could and should be taught in public schools couldn't be saner. It's too bad Henry Morris won't listen to him.

## Text of "Revised" Dannemeyer Amendment

California Congressman William Dannemeyer's "Community Life" Constitutional Amendment has been revised (as noted in the last issue):

Nothing in this Constitution shall prohibit the inclusion of voluntary prayer in any public school program or activity. Neither the United States nor any State shall prescribe the content of any such prayer.

All references to creationism have been stripped, to reduce "confusion" with other issues, according to a Dannemeyer spokesperson.

## Falwell Seeking Bond Issue for Liberty U

An article distributed by the Religious News Service on January 17, 1990 describes the attempt of evangelist Jerry Falwell to acquire a \$60 million public bond issue to support his college, Liberty University. Officials at the church apparently felt it necessary to downplay the religious aspects of the institution, referring to it not as a "Christian school" but rather as "a school that consists primarily of Christians," and using other euphemisms. Teachers are required, however, to sign a statement attesting to a belief that "any truth that conflicts with the Bible is judged to be in error." According to the newspaper article, Education School dean Robert Gaunt "said Mr. Falwell had told the department not to teach creationism, as had been done in earlier years."

The claim that creationism is no longer being taught does not mean that evolution is being taught or that creationism has been omitted from the curriculum. As discussed in *NCSE Reports* 9(6):8 and elsewhere, creationists have been busy inventing euphemisms for "scientific" creationism. The Liberty University case looks like an opportunity to teach "intelligent design" or "the abrupt appearance theory," two creationist ploys to avoid the first amendment problems of teaching creationism.

## NEWS



## The Astronomer's Universe

**Stars, Galaxies, and Cosmos**  
Herbert Friedman

Until the first quarter of this century, the universe was thought to be static and eternal. Friedman introduces the reader to the pioneering scientists and the tools used to unlock the secrets of space, from the first great optical and radio telescopes, to today's orbiting x-ray and infrared observatories.

## Relatively Speaking

**Relativity, Black Holes, and the Fate of the Universe**  
Eric Chaisson

A readable and lively synopsis of relativity, and the (very) big picture: cosmological foundations of the universe, various models of the universe, black holes, etc.

## Also ...

**Did Darwin Get It Right?**  
John Maynard Smith

**The Darwinian Paradigm**  
Michael Ruse

## A Very Quick Read

If you don't have time for a whole book, how about a bumpersticker?

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## Many New Books This Issue!

### The Dictionary of Science and Creationism

Ronald L. Ecker

In dictionary format, Ecker outlines both sides of the creation/evolution controversy in an easy-to-understand manner. Under each entry, pertinent evidence for evolution is succinctly presented, as well as reasons that the creationist arguments are scientifically invalid. Articles are cross-referenced and indexed for improved accessibility.

### Science Held Hostage

#### What's Wrong with Creation Science AND Evolutionism

Howard J. Van Till, Davis A. Young, and Clarence Menninga

Arguing for a middle ground between a young earth and a universe without God, these Calvin College professors present case studies of the creationist arguments such as the shrinking sun, dust on the moon, ocean salt levels and missing rock layers in the Grand Canyon, as well as critiquing P.W. Atkins' *The Creation* and Carl Sagan's "Cosmos" series.

### Visitors from the Red Planet and 76 Other Solve-Them-Yourself Mysteries

Dr. Crypton (a.k.a. Paul Hoffman, editor-in-chief of *Discover*)

Why don't kiwifruit and Jello mix? ... Why is it hazardous to drink champagne in a tunnel? ... Why are wintergreen Lifesavers good to chew during a power failure? Science and suspense combine in 77 mysteries for the reader to solve. Each turns on a logical error, a wayward fact, or a bemusing riddle.



## KEEPING TABS

### Molecular Nonsense in the *Bible-Science Newsletter*

Frank J. Sonleitner

In the December 1989 issue of *Bible-Science Newsletter (BSN)*, Nancy Pearcey, *BSN* contributing editor, writes in the "World View" column that the latest biochemical evidence (particularly that dealing with cytochrome c), refutes evolution and proves creation.

Evolution explains this data!

Pearcey claims to make predictions from evolution about what should be found concerning cytochrome c that the actual data contradict. Actually it's Pearcey's predictions that are wrong. All the life forms she considers are present-day living forms; hence, none are "more primitive" or "transitional stages" between others. They are all on the tips of the twigs of an evolutionary tree. The only forms that are truly transitional and would make a true evolutionary "series" would be forms that lived in the past and exist now only as fossils. Thus, the bullfrog is a highly advanced and specialized amphibian. The amphibians that were actual transitional forms between fishes and reptiles existed in the late Paleozoic Era.

This same misunderstanding of evolution leads to apparently inconsistent and contradictory statements. At one point in the article, she writes (in italics yet):

*If we attempt to establish evolutionary series based on the protein sequence in cytochrome c, it turns out to be impossible.*

Again, one can't make a true evolutionary "series" from present-day living organisms. But one can construct a phylogenetic tree from the cytochrome c data by using the molecular clock hypothesis, and she admits that the molecular clock hypothesis works:

As a result, at any point in time we would expect to find similar percent sequence divergences for the cytochrome c in various descendants of a common an-

cestor — which is what we do find.

The molecular clock hypothesis explains these differences as the accumulation of neutral mutations in the various lineages over great lengths of time. Because all present-day living forms are equally distant in time from their common ancestor, one would expect similar degrees of divergence in cytochrome c. The fact that one does find this is also evidence that the clock does run with some constancy. The additional fact that the divergence data are independent geological evidence is further evidence for the reality of the clock. The article presents false information regarding one supposed weakness of the molecular clock hypothesis. Mutation rates are not related to reproductive rate. They are related to generation time. But the amino acid sequence differences do not just reflect mutation rates that produce mutations in single individuals, but the rate at which such mutations can become fixed in entire populations, which depends on a lot of other factors besides generation time. There are reservations about the accuracy and constancy of molecular clocks based on considerations other than the erroneous one mentioned in this article. Regardless of this, the cytochrome c data do not contradict evolutionary expectations.

Regardless of how good or bad the molecular clock may be as a clock, if the differences in cytochrome c are due to accumulation of random, neutral mutations, the similarities that (for example) all vertebrates share relative to insects, plants and bacteria, can be explained only by common ancestry! That makes these data direct evidence for evolution and not just another criterion for classifying organisms.

The article also contains obfuscatory nonsense. Referring to the cytochrome c data, Pearcey writes:

This fact is often seized upon [sic] evolutionists as some how new confirmation of evolution. But similarity in molecular structure is in principal no different from similarity in skeletal structure. In neither case is it an explanation for anything; it is merely data that itself needs to be explained. The



sheer existence of similarity tells us nothing about why it should be there or where it came from.

Of course, similarities in molecular structure and skeletal structure are data to be explained. And evolution explains them. The fact that evolution explains them is evidence for and confirmation of evolution. Where's the problem? On the other hand, as I will show below creation cannot explain the cytochrome c data.

### **Creationists can't explain this data!**

The article asserts:

The best explanation of the data from biochemistry is that living things cluster around a basic pattern or type for each class of organisms, without any intermediates from one type to another. Each class is isolated from all others.

There are two things wrong with this assertion. First, the statement is not true if you include the fossil forms. They do provide intermediate forms and blur the distinctions between the taxonomic entities, just as evolution requires. Unfortunately, we don't have fossil cytochrome c available. It would exhibit intermediate degrees of divergence.

Secondly, the statement doesn't actually explain anything — particularly the features of cytochrome c. Consider that cytochrome c is an enzyme performing an identical function in all the organisms considered, and it does it under virtually identical chemical conditions in the mitochondria of all those forms (except, of course, the bacteria.) Thus, if all these forms were created a short time ago by an intelligent, rational creator, cytochrome c should have an identical structure in all these forms. But it doesn't! So why is this enzyme different in the various classes?

Even if creationists fall back upon a molecular clock model (the clock running about a million times faster than the evolutionists postulate), the expected results would be different. Because all these forms would be equidistant in time from their creation, they all should be equally different from one another (say 65% different). Thus, the creationist is almost forced to assume that these dif-

ferences in cytochrome c structure are somehow adaptive (functionally significant) in the various forms. But all the biochemical evidence suggests that observed differences in structure are neutral and have no effect on the function of cytochrome c. (That, in fact, is what makes the molecular clock plausible.) Thus, I would like to challenge the creationists to present some specific explanations as to the function of these structural differences in cytochrome c, not just some meaningless assertions that "The best explanation is ...."

In contrast to Pearcey, I claim that the results of protein sequencing provide some of the most significant evidence against creation and for evolution.

## **ICR's Graduate Program in Science Flunks**

The Private Postsecondary Education Division (PPED) of the state of California met on March 13 to decide whether to accept the recommendation of the visitation committee to withdraw the Institute for Creation Research's permission to grant graduate degrees in science (see *NCSE Reports* 10(1):1). No one from ICR testified on its behalf, though Kenneth Cummings attended the session and talked informally with committee members. The vote was 12 to 3 in favor of sending the visitation committee's report to superintendent Honig.

Honig accepted the PPED's report and informed ICR that it can no longer grant graduate degrees in science. The next step for ICR is to have the decision reviewed administratively for procedural errors through the Attorney General's office. This, however, is a time-consuming procedure, which in the past has taken years (literally!) to complete. The California Attorney General is running for governor this year, so his office might be even slower than usual in these matters.

Assuming that the decision survives the procedural challenge, ICR's next recourse would be to take the case to superior court.

NCSE will keep you posted.

## **News Flash!**

### **ICR Sues Honig!**

On April 13, the Institute for Creation Research filed a suit in federal court against Bill Honig and the California Department of Education for injunctive relief from the closing of their graduate school. Grounds were denial of ICR's freedom of speech, free exercise of religion, and due process.

NCSE Reports will carry the full story in our next issue.



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*the full committee report is available from NCSE at cost for \$5.00*

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## ICR Confused by Approval Decision

In the March *Acts & Facts*, the Institute for Creation Research (ICR) views the visitation committee report (see *NCSE Reports* 10(1):15) as "A classic example of overkill, [containing] numerous errors of fact, unwarranted assumptions, and prejudicial opinions."

They miss a critical point of the visitation committee regarding the integrity of science. ICR requires faculty members to pledge allegiance to a set of beliefs (young earth creationism). Now, a private school, such as a religious school, that is not accepting public money, can require statements of faith from its employees. That ICR beliefs are not presented as tenets of faith but as *scientific* beliefs severely compromises scientific integrity. Scientists cannot set out to find only the evidence that supports their preconceived notions. But ICR elects to misunderstand this point, restating the passage to imply that it is creationism *per se* to which the committee objects, rather than the free inquiry-inhibiting statement of faith. To illustrate both what the committee really said and ICR's biased selection of quotations, the full passage follows, with ICR excerpts in italics.

It should be noted in closing that the visiting team did not feel it necessary to address any issues of scientific integrity [not "academic freedom" as ICR has argued] that might be posed by the creationist orientation of the ICR; it became clear that the team would be fully occupied with issues of academic quality. *The questions raised by creationism, however, are far from trivial.* They involve the issue of scientific integrity because of the fact that the unamendable bylaws of the ICR require each faculty member annually to reaffirm his adherence to a particular set of beliefs (the tenets of "scientific creationism") as a condition for continued employment. Inasmuch as these beliefs or tenets directly overlap the areas of presumed free

scientific investigation of the faculty, the issues of scientific integrity and unfettered intellectual inquiry would have arisen of necessity, had the low quality of the graduate program not made these issues superfluous. *To be specific, unless these questions of scientific integrity are adequately addressed, no remediation of the problems addressed in this report will render this program acceptable under EC 94310.2.*

## Science at the ICR: The Role of the Null Hypothesis

Stanley Rice  
The King's College and  
Sarah Lawrence College

In *Creation/Evolution*, Issue XXV, I cited several examples of poor scientific research that had been published by young-earth creationists. I pointed out that this poor research was not a necessary consequence of their creationist convictions but appears to have resulted from carelessness. I have no desire to continue finding fault with young-earth creationist research, but I regret to say that I found another example of faulty creationist science, and once again the faults could have been avoided without the sacrifice of their young-earth creationist convictions.

The Institute for Creation Research's *Impact* # 198 (December 1989) was written by Steven Austin, the Chairman of the Geology Department at the ICR: "Earthquakes in These Last Days". Austin has been trained as a competent scientist. In this article, however, Austin has completely mistaken the role of the null hypothesis in the reaching of scientific conclusions, a role that young-earth creationists should join with all the rest of us in accepting.

Austin presents data regarding the frequency and intensity of global earthquakes since 1900. He admits that there is no clear pattern of increase or decrease in either frequency or intensity. What can one conclude from this? Why, nothing at all, one would think. But



this? Why, nothing at all, one would think. But Austin concludes from this that recent earthquakes in fact constitute evidence that Christ will return soon!

This is Austin's reasoning: the "signs" of the Second Coming of Christ (which includes earthquakes) are the "beginning of sorrows" according to Matthew 24:8. The word "sorrows" should actually be translated "birth pangs," which denotes pain and hope at one and the same time. (This far, this is reasonable Bible interpretation.) Next, Austin claims that birth contractions are irregular (which anyone who has participated in a human birth can testify is not true). Therefore, continues Austin, one of the evidence for the Second Coming should be irregular earthquakes. That is, a *lack of pattern* of earthquake frequency and intensity constitutes evidence that we are living in the Last Days!

Scientific hypothesis testing is based upon the rejection of the null hypothesis, and the null hypothesis is the lack of a statically-significant pattern. If the null hypothesis is accepted, the conclusion is — nothing! Yet Austin insists, in the last paragraph, that these earthquakes constitute "communication" from God! Are we to believe that God communicates *noninformation*? The conclusion a Christian ought to reach from examining the earthquake data is: Christ may return soon, or He may not, earthquakes do not provide us with any information.

Austin, despite his advanced education and his academic chairmanship, and those at the Institute for Creation Research who published his article without proper scientific review, would benefit from restudying the basic principles of

Wesley College telephonist had been abused and the university had been attacked for allowing its facilities to be used for such purposes.

"Whatever happened to free speech?" Alan Gill asked, with some justification. I agree wholeheartedly and I vigorously defend creationists' rights to free speech. However there is another side to the story, one familiar to all who have attended CSF meetings on public education premises and who have tried to speak freely on the topics being addressed, as I can illustrate.

Alan Gill's article was based on interviews with Dr. Carl Wieland and Dr. Andrew Snelling of the Creation Science Foundation, during a break in the conference. However, rather surprisingly, he was not allowed to interview the leading visiting speaker at the conference, Dr. Kurt Wise, a U.S. paleontologist brought out by the CSF for the Sydney meeting. Alan Gill informs me that he did not attend the actual conference. Well, I did attend part of it and I can provide a first hand report on the creationists' interpretation of "free speech" and intellectual discussion.

As a qualified geologist and paleontologist with 35 years experience I was keen to hear two talks in the Thursday programme. The first was by Dr. Andrew Snelling (B.Sc.(Hons.), Geology, University of NSW; Ph.D. Geology, University of Sydney). His topic was "How Old Is Everything?" — a fairly important subject to all geologists. I was intrigued to know how any qualified geologist could defend the idea that the world was formed in 6 days about 6000 years ago before being destroyed and rebuilt in a year-long world wide Flood around 2345 BC (during which year, according to Dr. Snelling, Ayers Rock was formed).

At my suggestion Dr. David Hendry, the supervisor of Dr. Snelling's research, also attended the talk. David Hendry, a geologist, is conversant with the methods of dating rocks from the radioactive elements they contain, methods used by scientists world-wide. In fairness to Dr. Hendry it should be noted that his former student's conversion to young-earth creationism and evangelism only became apparent after Snelling left Sydney University.

## Kurt Wise in Australia

Alex Ritchie

*Editor's note: Dr. Ritchie, a paleontologist with the Australian Museum in Sydney, wrote what follows as a letter-to-the-editor responding to an article in the Sydney Morning Herald.*

Alan Gill (*Morning Herald*, January 16) reported on an interview with leaders of the Queensland-based Creation Science Foundation (CSF) which recently held a 6-day Summer School at Sydney University. Mr. Gill regretted that the





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*...one got the distinct impression that scientists were the last people creationists wanted to attract.*

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Each full day of the conference (9:15 am - 9:30 pm) consisted of 5 lecture/film sessions, with tea or meal breaks. The only period specifically provided for Panel/Discussion was 9:30 pm!

Although the programme boldly stated "It's for Everyone — Layman or Scientist" very few scientists of my acquaintance even knew it was on. Unlike ANZAAS [Australia-New Zealand Association for the Advancement of Science. *Ed.*] it had not been advertised in scientific circles and, in fact, one got the distinct impression that scientists were the *last* people creationists wanted to attract.

Dr. Snelling's talk on the age of everything, the first item in the morning programme, was presented to a largely lay audience, apparently with little knowledge of geology. It was a travesty of the subject but it conveniently filled the entire time allocated leaving no time for questions.

The Chairman, Dr. Wieland, quickly tried to close the session for the morning tea-break. As one of three qualified geologists present I objected loudly. I requested the right of reply to some of Dr. Snelling's more ludicrous "geological" statements and was informed that I could only do so during Question time at 9:30 pm, 11 hours later! By persevering (and by drawing on previous experience of creationist debating tactics) I was permitted to speak. Dr. Hendry then asked permission to comment on some of the incredible dating methods cited by his former student, all of which gave "ages" under 6000 years for the earth (not to mention the sun, moon and stars). Not only was this refused, he was loudly shouted down and even physically threatened by a member of the audience. It was a very unpleasant experience. For David Hendry, attending his first creation "science" meeting, it was also a very enlightening one, especially concerning the creationist attitude towards "free speech," even on university premises.

Undeterred, I attended the evening session to hear the visiting American spokesman, Dr. Kurt Wise, speak on the topic "Am I a Monkey's Nephew? Fossils and 'Human' Evolution." Since I was heavily involved in preparing the Australian Museum's new human evolution gallery, "Tracks Through Time," I

was naturally interested in a creationist's interpretation of the subject.

I am delighted to report that it was a most enjoyable experience, and everything that the morning session was not. Unlike his Australian colleague, Dr. Snelling, Dr. Wise had thoroughly researched his topic and he presented it absolutely fairly, from both the creationist and scientific points of view. On my earlier recommendation he had even visited our gallery and publicly praised it highly. After his talk I had ample opportunity to ask questions and received courteous, honest responses.

Afterwards Kurt Wise and I retired to a quiet corner for a long discussion on science and creationism over a cup of coffee. We parted good friends, agreeing to differ over certain fundamental issues (mainly the evidence for the age of the earth and the fossil record) but with mutual respect for each other's opinions.

I am sorry that Alan Gill wasn't allowed to interview Dr. Kurt Wise because I am sure it would have resulted in a much more constructive, stimulating, and thought-provoking article. Instead we were served up the same old reheated hash from our Queensland-based creationists whose main tactic (I suggest deliberately) is to confuse, not clarify, the differences between religion and science, to the detriment of both disciplines.

The issue is not creationism *versus* evolution; evolution is irrelevant, a red-herring. It is not even between religion and science; most Christians (and other denominations) have come to terms with the scientific interpretation of the universe. The argument is between a fundamentalist, young-earth creationism and the whole of science -- physics, chemistry, astronomy, geology, paleontology, biology, etc. — all of which are interrelated. And young-earth creationism is the mumbo-jumbo version that creationists want the right to teach in our schools under the guise of "creation science."

On the question of "free speech" I defend the right of organisations such as the Creation Science Foundation to use university premises. I suggest, however, that their protestations would carry more weight if they extended the same rights to others when they hold public meetings on public education premises.



## Response to "A Two Model Approach to Book Hype"

Wendell R. Bird

*Editor's note: The following uncut letter-to-the-editor is printed separate from the letters column because of its great length.*

I generally enjoy my subscription to *NCSE Reports*, and always am fascinated by your intermittent articles on the paranormal and creation.

I was disappointed, however, by the "Two Model Approach to Book Hype" (*NCSE Reports* 9(6):21) on my book. It ends with a reference to a "full-length review," and I am writing simply to express the hope that it will be more fair.

First, the brief review contains a number of inaccuracies that I want to point out, so that they need not recur. The book indeed does have a preface by Dr. Gareth Nelson, but also has prefaces by Dr. Robert M. Augros, Dr. W. Scot Morrow, Dr. Dean W. Kenyon, and Dr. Russell L. French (the first are three evolutionists and the last two are non-evolutionists). The Nelson preface is accurately quoted by the publisher's excerpts on the dust jacket both in terms of correct words (which the brief review concedes) and accurate context. Dr. Nelson himself concludes that the publisher's quotations are in context and follow the normal practice of not quoting the full preface on the dust jacket, and that it "was not my intent to damn the book with 'faint praise,' but rather to comment on the real virtue of the book," notwithstanding his many disagreements with the book's conclusions. I do not think your reviewer reads or quotes Dr. Nelson's preface fairly to restrict his reference to the book as "scholarly" as being merely "in comparison to standard 'creation science works,'" and there your reviewer's hostility makes him the person "lift[ing] out of context." While it is true that Dr. Nelson does not endorse the book as correct in all or most of its conclusions, he does not "damn[] with faint praise"

or manifest "cynicism," but instead makes positive comments along with the negative ones. Your reviewer finds damnation by faint praise only by litotes from his prior misunderstanding or misquotation of Dr. Nelson's use of the term "scholarly." And the reviewer leaves out material parts of the context of Dr. Nelson's preface. The book does not advocate a "Two Model Approach" in the normal sense of the term (creation-evolution), and does not advocate the teaching of creation in public schools. The book also is not "essentially an updated and expanded version of Bird's Supreme Court brief," both because over half my reading and writing time on the subject of origins that was used for the book occurred after the Supreme Court briefing and argument was over, and because the approach of the book in connection with abrupt appearance with comparatively limited reference to creation differs from the approach in the Supreme Court case that was dictated by the Louisiana statute's endorsement of creation.

Second, I am bothered by the disparaging reference to "Wendell Bird's methodology," by which the reviewer seems to allege persistent misquotation or quotation out of context. I and my research assistants went to great lengths to check and double-check and triple-check quotations for wording and context, to mark each of the 5,000 evolutionist scholars who are quoted or cited as evolutionists who have not in any way endorsed non-evolutionist views (e.g., v.1, p.1 and the beginning footnote of each chapter), and to quote accurately in content those quotations that have been misquoted by others (e.g., 1:73, 369). Doubtless, there are some inadvertent inaccuracies among 5,400 footnotes, but every effort has been made to avoid them. Besides accurate quotations, terms have been carefully defined by standard evolutionist works, for example distinguishing between punctuated equilibria use and discontinuist use of "abrupt appearance" (1:18, 27, 50; 2:73, 369), and between Darwinism and macroevolution (e.g., 1:140-41, 2:112-13, 2:123-25. In other words, I have gone to a great deal of effort to meet the criticisms of non-evolutionists that frequently appear in



your journal and elsewhere, and hope that I will not be forced to the conclusion that the criticism have been insincere weapons in war and that no non-evolutionist work will ever be found to meet the standards of a biased military court. In the book, I instead have expressed my sincere belief that the debate is an honest one, and that errors have occurred on both sides. Moreover, I trust that your reviewer's hostility to my conclusion advocating pluralism in science will not cause him to quote me inaccurately or out of context, to manufacture misquotations or other problems that do not in fact exist, or otherwise defame me.

Thank you for the courtesy in reading this and considering my request. I look forward to seeing the full NCSE review when it comes out. (As you are probably aware, I sent a courtesy copy of the book to Dr. Eugenie Scott some time ago.)

## Schadewald Replies

As most regular readers no doubt guessed, I wrote "A Two Model Approach to Book Hype." I am astonished that Mr. Bird somehow misinterpreted this squib as a review of his two-volume work, *The Origin of Species Revisited*. It is nothing of the kind. As the title explicitly says, the piece is about book hype, particularly the way an anonymous publicity flack writing for the Philosophical Library quoted snippets from Gareth Nelson's preface while suppressing important qualifiers. To expose the flack, I had to quote liberally from Nelson's preface. The book itself is mentioned only to provide context. I suppose my squib could be considered an in-depth review of one section of the publicity flyer (Bird incorrectly assumes it is based on the dust jacket, which I have not seen). But no way is it a book review. (For a *real* review of *The Origin of Species Revisited*, see p. 22.)

Bird's failure to understand what the piece is about is only part of his problem. He alleges that "the brief review [sic] contains a number of inaccuracies," which he proceeds to list. Let us examine a few of them.

*The book indeed does have a preface by Dr. Gareth Nelson, but also has*

*prefaces by Dr. Robert M. Augros, Dr. W. Scot Morrow, Dr. Dean W. Kenyon, and Dr. Russell L. French... So what? What do the other prefaces have to do with the way the anonymous flack treated Nelson's preface? Bird confabulates "inaccuracy" out of irrelevancy. His charge is false.*

*The Nelson preface is accurately quoted by the publisher's excerpts on the dust jacket both in terms of correct words (which the brief review concedes) and accurate context. In my view, the way Nelson's words were selected and reassembled is sleazy and dishonest. Bird defends the flack's methodology. I printed both the flack's handiwork and the relevant portion of Nelson's preface so readers could form their own opinions. I urge everyone to pull out NCSE Reports 9(6) and (re)read p. 21, both to better understand what Bird considers accurate use of quotation and to evaluate the merit of his charge against me.*

*Dr. Nelson does not... "damn[] with faint praise" or manifest "cynicism"... In my opinion, saying that an author reaches his desired result by consistent use of loaded dice is *damned faint praise*, whether or not that was Nelson's intention. Again, Bird and (certainly) Nelson are free to differ, and readers can form their own opinions.*

*[T]he reviewer leaves out material parts of the context of Dr. Nelson's preface. Mr. Bird leaves out material restrictions imposed by copyright law. In quoting as much of Gareth Nelson's short preface as I did (every paragraph the flack extracted from), I pushed "fair use" to the limit. His charge is deceptive.*

*The book does not advocate a "Two Model Approach" in the normal sense of the term... I neither said nor implied that the work advocates a Two Model Approach in any sense of the term. The two models are obviously what Gareth Nelson wrote and what the flack did with it. Once again, the alleged "inaccuracy" is confabulated.*

*The book also is not "essentially an updated and expanded version of Bird's Supreme Court brief"... Funny, but that is essentially how a creationist who helped Bird with the book described it to me! (That will teach me to rely on a creationist source.)*



In summary, Bird's list of "inaccuracies" is rooted in misunderstanding, misrepresentation, quibble, confabulation, and irrelevancy.

## Tell Us About Discontinuist Theory

While we have Mr. Bird's attention, perhaps he will tell us something about his theory of abrupt appearances (or discontinuist theory). I have been following creationism for more than a decade, and I can summarize my experience in a short dialog:

*Skeptic:* Tell me something about creationism.

*Creationist:* Evolution sucks!

*Skeptic:* That's pretty negative. Tell me something positive about creationism.

*Creationist:* Evolution *positively* sucks!

I have been trying for years to get a creationist to tell me something positive and scientific that the creation model says about why the natural world is as we find it. (When the substance of my challenge was published in *NCSE Reports* 9(2):3, two creationists responded, both irrelevantly.) Bird claims that his discontinuist theory is something other than creationism, so perhaps it succeeds where creationism fails.

Please tell us, Mr. Bird, what *scientific* statements can discontinuist theory make about (say) why the animal kingdom is as we find it? Why do humans, cattle, and birds share homologous structures? Why do they have similar biochemistry? Why does there appear to be a tree of descent, misinterpreted by early creationist naturalists as the Ladder of Life? Why is the tree derived from morphological considerations confirmed by biochemistry? Conventional science offers the same simple answer to all of these questions — all animals have descended from a common ancestor.

Obviously, no variation of "evolution positively sucks" is acceptable. Neither can the observations be asserted to explain themselves (for example, "Structures are similar because they are observed to be similar"). If discontinuist theory cannot make positive scientific statements about these phenomena, it is as intellectually bankrupt as the creation science it seems to mirror.

## Current Contents of Creationist Literature

*Bible-Science Newsletter*, February 1990. In the lead article, "Origin of the Specious," editor Paul Bartz prints letters by Michael Zimmerman and NCSE president John Cole responding to misleading material on the Scopes trial in the November 1989 issue. Reverend Bartz responds with more specious material. — In "Evolutionists Admit Religious Motivations," Bartz cites as evidence Darwin's joking reference to evolution as the "devil's gospel". — "Heritage of a Racist: H. L. Mencken," a misinformed *ad hominem* by the same author, illustrates the gutter-level creationism he espouses.

\* \* \*

*Bible-Science Newsletter*, March 1990. The issue opens with a long article about Noah's Ark translated from a Turkish newspaper. — Bartz's lead editorial is an attack on the gap theory of creationism. The bottom line: "[E]ven one death before Adam makes the gospel, as presented in the Bible, a lie [original italics]." — The *Contrast* pull-out section is "Should Students Be Taught How to Question Evolution Evidence?" by Randall Hedtke, a high school biology teacher, St. Cloud, MN. Nothing new.

## New Fundamentalist Coalition Forms

The *Christian Coalition* is a new "issue-oriented group forming to mobilize and train Christians for effective political action." Targeted at "Evangelicals, conservative Catholics and their allies," the group plans to organize locally and nationally to promote "Christian values" and "monitor legislative initiatives of concern to our membership." Beverley LaHaye, Reverend Pat Robertson, and Reverend D. James Kennedy, religious right leaders with antievolution views, are prime movers in this new group.

One of their projects is a "Christian Legal Defense Fund" to "fund legal challenges by Christians protesting violations of their historic freedoms," so they may oppose evolution or try to promote creationism. Their address is Box 1990, Chesapeake, VA 23320, (804) 424-2630.



# The Origin of Species Revisited: The Theories of Evolution and Abrupt Appearance

Wendell R. Bird (New York: Philosophical Library, 1987, 1988, 1989). Two volumes, \$65.00

Reviewed by Arthur N. Strahler

Creationist lawyer Wendell R. Bird's work is in two volumes of about 550 pages each. Volume 1 contains most of the text relevant to Bird's theory of abrupt appearances. Volume 2 deals with philosophies of science and religion, history, education, and constitutional issues. In this review, references are identified by volume and page number.

Seasoned creationist-watchers will find little or nothing new in Bird's massive work. Instead, they will be inundated with redundancies and drowned in quotations. The latter are mostly brief and nearly all from the publications of scientists who are described as not being proponents of "either the theory of abrupt appearance or the theory of creation (1:1)." The citations appear to have been selected as a means whereby scientists can unwittingly be made to perform self-incrimination and science-bashing. This review is limited to analyzing certain key problems Bird's theory presents, drawing largely on the first 12 chapters. Most of what follows is abstracted from a detailed analysis now in press at *Free Inquiry*.

Bird distinguishes three theories for comparison and analysis (1:1), the theory of evolution, the theory of abrupt appearances or discontinuitist theory (we shall use the latter term here), and the theory of creation. He offers the following definition: "The theory of abrupt appearances is defined as scientific interpretations of scientific data postulating origin through discontinuous abrupt appearance in complex form (1:1)." Two crucial terms are "discontinuous" and "in complex form." Bird characterizes evolution and discontinu-

ist theory as constituting a "noncreationist" class. Discontinuitist theory "does *not* necessitate reference to a creator or ad hoc explanation based on acts of a creator... (1:25)."

Discontinuitist theory is found by this reviewer to be vulnerable in four categories of analysis.

## I. Existential nature of the theory of abrupt appearances

Two existential interpretations are possible: (1) Bird assumes that an object's abrupt appearance in nature exists in the historical record independently of its being so identified by humans. (2) This reviewer proposes that each alleged "abrupt appearance in complex form" is a fiction arising from an incomplete set of historical observations of what was actually an evolutionary continuum.

These interpretations suggest a defect in Bird's assumption: Although observation can lead safely to the conclusion that an object exists in a particular state when observed, the implication that it did not exist that way unobserved in the prior time cannot be demonstrated. (Demonstrating inductively the empirical existence of nothing is not possible.) The uniqueness (essence) of Bird's discontinuitist theory vis-a-vis evolution lies in the antecedent condition or state prior to the discontinuity. The condition or state that follows the discontinuity is common to both theories and is not in dispute. Bird gives no unequivocal description of the antecedent state; hence, there is no meaningful statement of Bird's discontinuitist theory.

## II. Consequences of a purely empirical theory of abrupt appearances

Bird allows for "abrupt appearance" to be "instantaneous or geologically abrupt (1:52)." The latter allows for spans of tens of thousands of years for a single appearance (of a new species, for example). Using the definition of "abrupt" as "instantaneous" and taking it in the sense of a discontinuous mathematical function, we recognize abrupt appearance as consisting of a prior



class, *a*, terminated at some instant,  $t_i$ , and followed instantaneously by a distinctly different class, *b*. The number of such discontinuities is without limit. The prior class, *a*, may thus be a null class. Under evolutionary theory, there can be only a single  $t_i$ , followed by a continuum of evolutionary change.

In place of any description of the prior state (class *a*), Bird offers a most remarkable concept, "a natural law of the abrupt appearances" that applies only in those "singular events" or "initial appearances (1:95)." This law is "...different from those visibly operating today." The law would contravene existent laws of thermodynamics, biogenesis, and statistical probability (1:95). Bird fails to state this law. In any case, it cannot exist; it is not logically possible, because the domain of the law lies entirely within class *a*, which for the *ex nihilo* case is by definition a null class. Taken together, Bird's theory and law are seen as a preposterous and monstrous concoction offered as a serious empirical theory of the universe.

### III. Fitness of the theory

Excluding reference to the post-discontinuity state (class *b*), which is common ground for both discontinuitist theory and the theory of creation and not in contention here, we evaluate the fitness of the hypothesis that the prior state (class *a* objects) was one of non-existence of matter (a null class). (Alternatively, we can assume a primitive, or noncomplex state of matter for class *a*; that would make no difference here.) In a desperate attempt to introduce explanation into discontinuitist theory, Bird writes, "Discontinuity scientists suggest that abrupt appearances and systematic gaps are explained most naturally and logically by discontinuity or unrelatedness of the natural groups of plants and animals (1:50)."

But that's merely a repetition of his theory. Bird offers no explanation at all. No physical process is referred to, no basic laws invoked, and no description given of how a species or object is assembled or from what materials.

Bird claims that discontinuitist theory qualifies as being both testable and falsifiable. His long list of testable claims, however, consists only of what is observed in the post-discontinuity class *b*, and these claims are all found also in evolutionary theory. No testable deduction (prediction) can be derived from the essence of discontinuitist theory, which rests entirely with the pre-discontinuity state (class *a*).

### IV. The probability argument

Bird claims that the vast information content of complex molecules and of complex structures of any kind in the physical/chemical and biological make-up of the universe are associated with unacceptably high degree of improbability through randomly acting processes alone (the standard creationist argument). The catch is that discontinuitist theory, requiring instant complexity from nothing or from a noncomplex state, denies the existence of any process whatsoever. Process must involve change of state of matter, which requires finite time, whereas the time-infinitesimal of an abrupt appearance approaches zero. The probability argument simply cannot be applied here. Keep in mind that no supernatural creator or design is permitted to be invoked in discontinuitist theory.

To overcome this and the previously stated difficulties with discontinuitist theory, Bird finally establishes a logical connection between the theories of creation and discontinuity (2:166). All of Bird's lengthy arguments for discontinuitist theory apply equally well or badly to the theory of creation, so in effect he has promoted creation with the same best efforts he had made for the "nonreligious" (secular) discontinuitist theory. Details of this connection include his application of the law of the excluded middle (2:169). We can infer from this connection that discontinuitist theory is contrived for expediency, namely the necessity of keeping religion out of the legal argument for teaching "creation" science in the science classroom. This contrivance amounts to the discontinuitists' denial of a supernatural creator.



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