

*Other States to Benefit; Gablers Worried*

## Texas and California Cooperating on Textbooks

*Eugenie C. Scott*

In June, *Science* magazine reported that the Texas and California education departments were cooperating on standards for textbooks. Texas and California are the two largest textbook purchasers in the nation, and have exerted a great deal of influence on the textbook market. Previously, when Texas required evolution to be taught as "just a theory," textbook publishers began decreasing the amount of textbook space devoted to evolution. Now, when Texas has

required evolution to be included in high school biology and earth science textbooks, and California's Science framework strongly promotes evolution as a theme around which science should be taught, the trend has begun to shift back to more coverage of evolution. The cooperation between Texas and California is further good news for science textbook improvement. Both states have been involved in two major currents in

*Texas, continued on p. 5*

### Bumblebees Can Fly

Anti-evolutionists are fond of the assertion that, according to standard science, bumblebees cannot fly. This somehow implies to them that "creation by design" or something like that must be invoked to explain the bees' impertinence. The bumblebee case is used to show that science is impotent and theories can't be trusted.

John Maynard Smith, the prominent evolutionary biologist, reports in the 25 October 1990 issue of *Nature* on an early aspect of his research career: his proof that bumblebees can fly. This early work was ignored or spurned by the Establishment in 1950, it seems—specifically by the *Journal of Experimental Biology* which rejected it.

With fellow University College London undergraduate M.J. Davis, Smith sought to measure the direction and velocity of airflow involved in bee flight because the standard wisdom was that nearly 100% energy efficiency was required by an efficiency aspect in the equation called the "Reynolds

*Bumblebees, continued on p. 5*

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# Editor's Desk

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Anti-evolutionism continues unabated although, we hope, affected at least somewhat by our efforts. Grassroots pressures continue, and seemingly intellectual arguments continue to be raised; a Berkeley law professor, Philip Johnson, has recently published a "legalistic" argument against Darwin, for example. NCSE will review his book in the next issue (probably in the journal). Grassroots arguments are still the most potent, however. NCSE depends upon reports and information from supporters and invites comments and information.

I noted our evolving format last time, and the process continues.

Our new appearance is largely the result of the creativity of Deborah Klaum of Shutesbury, Massachusetts, who does freelance typesetting and design for a number of academic and commercial publishers as well as NCSE. She knows how to clarify things, how to ask the right questions and how to answer the ones we raise.

Consulting and Contributing editors have also advised. The basic format remains that devised by our first editor Karl Fezer and redesigned by his successor Frances Roelfs, and refined by Bob Schadewald, but we have tried to simplify a bit, muck around with margins, spacing, graphics, etc. If we've done it right, we'll never be finished. (If we've done it wrong, we'll never stop hearing about it . . .).

I hope we can phase in more graphics—photos, drawings, etc. I now have access to computer scanning facilities, but I do certainly need your contributed original drawings and photos (not *New Yorker* cartoons which are wonderful but usually prohibitively expensive to reprint!). My great thanks to Tom Barefield for his cartoons. If you can submit drawings or photos, I hope you will bear in mind the fact that they reproduce best when their lines are very clear.

The first journal issue was sent out several months ago along with *Reports* 11(1). That was basically produced by its former publisher. The next one will be OURS—probably no better, but you can shift the blame! It will be your next NCSE publication after this *Reports*.

*Mea culpa?* Several people have complained about my misspelling the name of Archbishop Ussher in a recent issue (one s, not two, appeared because of a typographic error/insertion). Looking on the bright side, without typos and replication errors in DNA, there would be no evolution, so you might want to look upon such lapses as further evidence against a perfectly created clockwork universe.

John Cole

# Letters

I received the Summer 1991 Issue of *Reports* and am offering a ringing *Bravissimo!* to you and your staff members for substantially improving the newsletter. The crisp writing and excellent layout, coupled with the regular appearance of the cartoons makes the publication an intelligent journal without the sharp odor of academia. Keep up the good work. The newsletter has indeed evolved into something worth reading.

Irwin Schwartz  
San Jose, CA

Just wanted to say the latest *NCSE Reports* arrived yesterday, and it's super. I like the format and the content. You're doing a great job.

Betty McCollister  
Iowa City, IA

You're the only game in town, so it's too bad *Reports* is so pathetic. Couldn't you spend a reasonable amount of time on it and make it literate and lucid? You're the creationists' best friend.

Unsigned postcard  
Atlantic City, NJ

Readers of *NCSE Reports* may be interested in a mystery novel I discovered recently. My wife reads about a mystery a week, and she brought to my attention one called *Mortal Words* by Kathryn Lasky Knight. In this

novel a writer of science books for children is killed after publishing a book on evolution [and being heckled about it from the audience at a meeting in Boston].

The author apparently did her homework. the infamous Paluxy river "footprints" are mentioned [repeatedly] along with the research by [James] Farlow, Glenn Kuban and Steve Shafersman. Some typical creationist arguments are discussed, and Ms. Knight's description of a fictional fundamentalist Texas college is worth the price of the book.

*Mortal Words* was published by Summit Books in 1990 [and in July 1991 became available from Pocket Books as a paperback].

James Rusk  
Garland, TX

*Ed: I've just read the book at your prompting. It's excellent in its portrayal of the argument—including characters proven wrong who think it all ended with the Supreme Court Aguillard decision. The book is a novel, but it includes accurate references to many real players in the struggle, so it is unfortunate that its list of people devastating the Paluxy creek footprints claims does not include Dr. Ronnie Hastings of Waxahachie (it even calls it "creek," which is legally accurate, not "river!"). He has been working on this matter harder and longer than the rest of us put together, as Kuban, Schafersman and Farlow would attest. Ms. Knight is a widely-respected author of children's books and nonfic-*

*tion treatments of evolution such as* *Traces of Life: The Origins of Mankind* (NY: Morrow Junior Books, 1989), *Dinosaur Dig* (Morrow Junior Books, 1990); *The Bone Wars* (NY: Puffin Books, 1989), *is an historical/science fiction novel for young people. Stay tuned for a short book excerpt, by the way!*

In the Summer 1991 issue, Mr. Robert Davis says he has never seen any discussion of the fact that Adam and Eve started out with a complete mastery of language [not just navels] and that even the serpent could talk.

Robert Ingersoll, in 1899, in his "The Devil" lecture states: "The first account of this being (the devil) is found in Genesis, and in that account he is called the "Serpent." He is declared to have been more subtle than any beast of the field. According to the account, this Serpent had a conversation with Eve, the first woman. We are not told in what language they conversed, or how they understood each other, as this was the first time they had met. Where did Eve get her language? Where did the Serpent get his? Of course, such questions are impudent, but at the same time they are natural."

Not much of a discussion, but at least the problem of language occurred to Mr. Ingersoll.

E.E. Brennaman  
Corpus Christi, TX

*Ed: Ingersoll presaged a remarkable number of modern causes such as womens' rights, church-state separation, racial equality, etc.*

[Despite reservations, I found issue 11(1)] interesting and enjoyable.

One of the most enlightening articles was the letter from T.O. Shavanas and the editorial response thereto. For several years I have been regularly beseeching our news media to identify the fundamentals of Islam by which Muslims who proclaim them as such may be distinguished from Muslims who do not, but my entreaties have fallen on deaf ears. Dr. Shavanas reinforces my growing suspicion that there is no such thing as Islamic fundamentalism. [You quote and endorse your predecessor to blame] the press for the current practice of "using the word [fundamentalist] as a synonym for religious fanatic" and rightly exclaim, "Extremists have appropriated and redefined too many words!" I greatly appreciated your implicit recognition that the fundamentals of Christian Fundamentalism do not extend to the principles of Biblical hermeneutics. It is my understanding that there are, in fact, three main schools and possibly several lesser schools of thought within contemporary Fundamentalism concerning the meaning of Genesis 1.

[Three grammatical errors jarred and unsettled me]. But the hands-down winner of the Reread (*ergo*, Resentment) Prize was the article "Anti-Evolution Group Demonstrates Math Ability." No matter how many times I read it, I still don't see in it what your headline writer saw. The article doesn't state that

Letters, continued on p. 4

# ICR Accredited?

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The ICR  
has never  
been  
accredited  
by a  
nationally  
or  
regionally  
recognized  
accrediting  
institution,  
until now.  
~

**R**eaders of *NCSE Reports* will recall that the Institute for Creation Research is embroiled with the California State Department of Education over whether the ICR Graduate School can be licensed to give graduate degrees in science. California *licenses* unaccredited schools, colleges, business schools, etc., to guarantee the public that the institution is financially reputable, and that the course of study is actually what is claimed (if you get a degree in accounting, you will have actually learned something about accounting, for example.) The ICR has never been accredited by a nationally or regionally recognized accrediting institution, until now.

In the September *Acts and Facts*, the ICR reported that the Transnational Association of Christian Schools (TRACS), which accredits ICR, has just been approved by the US Department of Education "as an officially recognized accreditation agency." TRACS accreditation rests predominantly on whether Biblical inerrancy and literalism are foundations for course work. Secondly, TRACS considers academic excellence. The DOE, under the current administration, has encouraged the growth of "alternate" educational experiences. Federal support programs are (we believe) now open to ICR students.

Previously, the ICR had applied for accreditation through secular agencies, and been turned down. It has been accredited by TRACS since 1990.

A student attending an unaccredited school will have a difficult time getting into further graduate programs, or obtaining a teaching credential. Students therefore usually seek out accredited institutions.

Does this mean that the ICR is now an accredited institution in California? No. According to the new legislation governing the licensing of unaccredited institutions, accreditation must be granted through the secular Western Association of Schools and Colleges (WASC). Until the ICR can be accredited by WASC, its graduates will not be able to obtain California teaching certifications. Admission to graduate schools in California is also lessened. The acceptance by the DOE of TRACS as an accrediting agency does not solve all of ICR's problems, though it solves a number of them. □

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## Letters *continued from p. 3*

NACE is an antievolutionist organization; in fact, evolution isn't even mentioned in the article. [The figures presented are clear enough and you have misread them.]

The article "Using our Orgins" also exasperated me. Not only is its labored preciosity ill-considered . . . , but the article per se is ill-considered. It is only fair to assume that the word "origins" was misspelled [by the creationist catalogue as "orgins"].

On page 20 the very first entry is "Bishop Usher" (*sic*). Only your most partisan supporters would presume to argue that such errors (which fairly leapt off their pages at me) are merely typographical.

*Reports* strikes me as an "insider" or "true-believer" sort of publication. It made me feel like the outsider I admit I am.

[Some foregoing complaints] notwithstanding, I thank Dr. Scott again for her presentation at the Buffalo meeting; her wit, charm, and erudition were most appealing.

D. J. Hager  
Warrenville, IL

*Ed: This is much-condensed from a long critique (from a non-supporter). Bishop "Usher" leapt off the page at me, too—in fact, it Usshered (sic) in a system which now lets me see total page proofs (Honest—it really was a printing error!), so I am now more to blame than ever for such gaffes—and alas, I fear they may happen again even though I am perfect and certainly strive to avoid errors. Sorry if my joking about "Orgins" didn't strike you as funny, but to anyone actually taking offense I can only say, "Lighten up!" The "insider" complaint is, of course, somewhat accurate, since this is the publication of an organization, not a mass market magazine. However, I hope we can be inclusive rather than exclusive; I am in fact encouraged by your response which finds some things to praise. Our goal is not to be divisive or pointlessly antagonistic—nor to shrink from advocacy and confrontation when needed. NACE is a national lobby for "Christian education" and strongly identified with antievolutionism and other Religious Right agenda items; we should have identified it more clearly.* □

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## Texas *continued from p. 1*

curriculum improvement flowing through the country, one direction stimulated by the American Association for the Advancement of Science, and the other originating from the National Science Teachers Association. The AAAS approach, *Project 2061: Science for All Americans* focuses on organizing science teaching around themes that unite science. This replaces the more traditional memorization of facts that typifies far too much science teaching and far too many textbooks.

The NSTA approach, called *Scope, Sequence and Coordination* after the title of a paper written by Bill Aldredge outlining the ideas, focuses on reorganizing the curriculum from the traditional "layer cake" of a biology/chemistry/physics sequence to one or more integrated approaches. One approach being discussed in Texas and some California schools, for example, seeks to teach four years of science in high school, with principles and facts from each of the major scientific areas (life science, earth science, and physical sciences) being taught each year instead of the "layer cake." Both the NSTA and the AAAS approaches have significant consequences for textbooks.

So much of the time, national commissions make good recommendations and they sit on the shelf. California and Texas are attempting to apply the ideas contained in the AAAS and NSTA studies, and to the extent they are successful, they will help to revolutionize science education. And, because of the combined economic clout of these two states, textbook publishers will be pulled along with them. Other states, of course, will be using these same textbooks, and will benefit from the changes as well. Using Project 2061's core curriculum, California and Texas will be attempting to collaborate on their curriculum guides to teachers and publishers. This should reduce the pressure on textbook publishers to "serve two masters," as well as encourage publishers to make the sweeping changes needed to reform science textbooks.

The cooperation between the two giants is in itself revolutionary. Formerly, California and Texas have

guarded their independence, and have not only failed to cooperate, but have had at times an atmosphere of hostility. But California Superintendent of Public Instruction, Bill Honig, and the Texas Commissioner of Education, W.N. Kirby, met in December of 1990 and set the collaboration rolling. Their lieutenants, Thomas Sachse in California, and James W. Collins in Texas, have met with each other and with publishers to work out the details.

It is important to realize that the collaboration is not across the board, but is an experimental attempt to reach agreement on one, limited part of the curriculum: 7th grade science standards for the 1994 adoptions. This is partly because 7th grade science textbook adoption is the first level to occur within a reasonable time period in both states, but also because the two states have sufficient structural differences that whole scale curriculum coordination would be impossible. Still, even this limited cooperation is a significant step forward for science textbook improvement, and if successful, will lead to more collaboration between the two states at other levels of the curriculum.

Textbook critics and evolution opponents Mel and Norma Gabler have held that Texas requires the presentation of "scientific" creationism in textbooks because of a clause in the Texas Proclamation requiring the teaching of evolution and "other scientific theories, if any." (The Texas Education Agency disagrees!) Neal Frey, spokesperson for the Gabler's Educational Research Analysts, remarked in a Dallas Morning News article, "California standards are different from Texas. I am not sure they are entirely compatible, and that is the main thing we are concerned about with this agreement. It could go either way depending on how much backbone Texas has in enforcing its standards on such things as evolution" (*Dallas Morning News* 6/25/91, p. 6A).

NCSE hopes the California-Texas agreement will hasten the day when all textbooks treat evolution in a scientifically and pedagogically responsible manner. □

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when Texas  
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of textbook  
space  
devoted to  
evolution.  
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## Bumblebees *continued from p. 1*

number." This was an unlikely/impossible requirement. "We used hoverflies," he writes, "because we found bees reluctant to fly when tethered." The flight issue was essentially the same, however.

"The airjet was about one third of the theoretical value, and the area of the jet greater. Because of

viscosity, the air that actually passes through the disk swept out by the wings drags along with it a substantially larger volume of air."

Smith concludes that using a lower "Reynolds number" for efficiency, bumblebees *can* fly, after all, leaving bees, if not anti-evolutionists, breathing easier. □

## Missing Link 10,001

John R. Cole

Remember  
that a story  
by a  
reporter for  
even the  
smallest  
weekly will  
probably be  
read by  
more  
people than  
your best  
journal  
article ever.

News stories in May and June trumpeted what the *NY Times* called a "Rare Fish Evolutionary Link to Human Race." A *Nature* article of 30 May reported that Coelacanth blood proteins resemble comparable hemoglobin chains in tadpoles, and the authors assert that the fish is apparently "the closest living relative of the tetrapods" (ie, early tetrapods, or four-legged critters). Other scientists hold out for the lungfish.

This is an interesting scientific debate, and the molecular biology may indeed prove to be on the side of Coelacanth. Whichever, there is certainly nothing here to encourage an antievolutionist (not even a campy '50s Coelacanth movie!).

Well, almost nothing. The strange headline about the origin of the human "race" is ready-made for ridicule. The "link" theme reinforces the popular idea that individual fossils need to be identified as THE ancestral critter when evolutionists are more and more talking about derived versus primitive "characters" rather than "ancestors" and when the "missing link" idea has been passe for decades.

The idea is at least suggested that humans are descended from a living Indian Ocean fish, which any scientist would disavow. This is sillier than the idea that humans are children of chimps, but it follows the same theme, and it makes a great stage show for quacks ("Is this fish your poppa?"). No one is descended from a living Coelacanth except its own spawn.

Worst of all, articles such as this foster the sensationalist image of evolutionary science being "revolutionized" by every fish scale or knuckle bone discovered. It is a somewhat reasonable, logical leap for people to decide that evolution is a totally chaotic guessing game where every discovery upsets every conclusion ever drawn before about anything. In comparison, Creationism looks very reasonable to a lot of people who think that a science literally destroyed by each new discovery is a bit shaky.

Certainly there are dramatic, revolutionary theoretical breakthroughs in science. Usually, however, they are greeted with the response of "Why didn't I

think of that?!" Especially after time passes. Revolutionary ideas such as Darwin's or Einstein's do not overthrow the structure of science—they are incorporated by it (perhaps after some resistance, as Thomas Kuhn argued in *The Structure of Scientific Revolutions*).

Science changes all of the time; the factual firmament shifts, not just the theoretical explanations. This flux upsets some people, unfortunately, but it exhilarates many of us. But fanning the flames of chaos and missing links and "changes in everything scientists ever thought" are very misleading to a public with precious little understanding of how science operates in the first place.

Discoveries of divergent processes, "primitive character states," etc. don't make good tabloid headlines, but where evolution is concerned even nontabloids too often seem to opt for the sensational approach. The news media are trained to go for the unique, even if it is not really available, so scientists need to be more media-aware if they are to get their messages to the public.

I suggest a few guidelines for interviewees:

- The reporter interviewing you may well have just come from a flower show and needs to cover a grocery store opening in 90 minutes.
- She is probably as smart as you are but probably is not a specialist in your field. Don't condescend or assume she knows what you do as a baseline—or that she agrees with you.
- News is timely—Have available some quotable quotes and specifics about what is new about your work without resorting to the idea of "revolutionizing all of human knowledge."
- Remember that a story by a reporter for even the smallest weekly will probably be read by more people than your best journal article ever; this may not be your audience of choice, but it is real and influential.
- News stories never satisfy interviewees because the reporters' jobs are not to serve their sources; editors, advertisers, and readers are their audiences, not scholar-peers, so remain calm when this shockwave hits. You're going to be quoted out of context, so don't be surprised.

- Have available a few pithy quotes you can live with and avoid the extremes of "no comment" (or general evasiveness) and an endless verbosity that allows a reporter or editor to select a possibly strange sentence out of a large morass.
- Try to be assertive and positive. "We defy the governor's order forbidding the teaching of evolution" is more quotable and newsy than "We disagree with the governor and are exploring options."
- In defending evolution do not assume anyone disagrees; do not demonize people because of their religious or political affiliations, because a lot of people who are members of groups denouncing evolution are, in fact, supporters of diversity. □

## Extinction: Worry, Threat or Promise?

Most biologists and paleontologists are concerned (often panicked) about the impact on the environment by industrial technology. Species are definitely being driven to extinction by human activity. The question is, how important an issue is this, and how influential are humans in affecting actual evolutionary change?

*Science* of 16 August 1991 devotes a series of articles and notes to this issue. Paul R. Ehrlich and E.O. Wilson, coauthor "Biodiversity Studies: Science and Policy" (pp. 758-762), and a number of other scholars produce articles and notes on the issue, as does the AAAS staff. Ehrlich and Wilson write that species formation and extinction are being affected drastically by human actions; in shorter notes, some take a more sanguine or casual view. All agree that we do not know even the number of species extant. This ignorance of even what *may* be disappearing deeply troubles Wilson and Ehrlich; they note what *is* known about small sections of tropical forest where species are—or were—unique but have been eradicated.

Critics argue that the lack of a complete inventory of species makes numerical prediction impossible and that nature can rebound from assault much better than "doom and gloom prophets" claim.

This *Science* issue is must reading for anyone interested in environmental protection, education or evolution. □

## Discover Magazine Sold Yet Again

The Walt Disney Company has purchased the assets of *Discover Magazine*. *Discover* suspended publication in July when the Family Media company folded. The last issue was dated August. Circulation had reached 1.1 million. Disney says the new version will be more selective in the advertising it accepts; many scientists had complained about pseudoscience in the advertising.

Disney plans to resume publication in Burbank, CA (retaining some New York offices) with a November issue. The FTC must approve the sale and is expected to do so.

Founded by Time-Life, *Discover* did not reach the superstar status that company wanted; It merged with the AAAS-sponsored *Science 84*, revamped, and eventually sold and revived in a more popularizing format.

*Discover* has consistently featured articles on evolutionary issues. The June issue included a primatology article and "Madam, I'm Adam," which focused on recent work by Gerard Lucotte tracing the evolution of the human Y chromosome and a male parallel to so-called "Mitochondrial Eve." In the July issue, "Sperm Wars," by Meredith Small, describes research on sperm competition ranging from the chemical to the behavioral.

## Phoenix Area Student Requests Creationism in Science Classes

Julie Cryer, sophomore at Glendale Union High School near Phoenix, AZ, has requested the school board to institute the teaching of scientific creationism alongside of evolution in her public school. "Both aspects should be presented equally in schools. Let the students decide for themselves which is right," she is quoted as saying in the *Arizona Republic* (8/28/91, p.1). Glendale assistant superintendent for curriculum and instruction Jim Kieffer, noted that teachers do not currently present the two model approach, and stated that creationism was not science.

Ms Cryer's mother was involved in a previous dispute at the school board level last spring, opposing a suicide-prevention curriculum. NCSE will keep you informed.

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... we do not know even the number of species extant.  
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## Quake Didn't Destroy Missouri—But Credulity Lives On

In the first week of December 1990, an earthquake did not destroy the Mississippi Valley region. Seismology has a non-event made so much news.

In 1989 a self-taught climatologist, Dr. Iben Browning, predicted a devastating quake for that region of the New Madrid Fault, but unlike professional seismologists, he was able not only to predict danger in a region but able to pinpoint the exact week it would happen. The media began a virtual countdown. Schools and businesses closed as precautionary measures, and the Red Cross was forced to mobilize resources. While enough journalists and tourists flocked to the Missouri epicenter to set off some end-of-the-world partying, no quake ensued except among seismologists shaking with fear that Browning's apparently baseless prediction might accidentally coincide with a real temblor.

*Science* (253: 622-623) reports on a Boulder, CO workshop held to assess the damage—to seismology, not to real estate. Richard A. Kerr's "The Lessons of Dr. Browning" notes that "leaving the field to pseudoscience proved a big mistake." Professionals had more or less ignored Browning, or else they dismissed him as a crank. Denouncing him did not really alter the public's support, however, and in the aftermath not only was the public harmed by misinformation, the reputation of seismology and other sciences was also tarnished.

Browning had a Ph.D.—in zoology, which made him reputable in many eyes. He had a long record of supposedly successful predictions reported faithfully in the press without challenge, even though they could easily be shown spurious. His failure then became the failure of science in general.

A few scientists began to debunk him a scant six weeks before doomsday, but by then it was too late. Why did they wait so long? "Scientists don't like to play on that level," *Science* quotes USGS seismologist Thomas Heaton. Other conference participants noted that had they moved earlier and more thoroughly, a great deal of public misinformation and fear and hostility could have been avoided.

But most scientists refused to "dignify" Browning's warnings with a response—even a belated one. Richard Eisner, director of the Bay Area Regional Earthquake Preparedness Project in Oakland, CA

observed, "We constantly deal with seers, channelers, and backyard seismologists who are making predictions. If you let it ride—as scientists and preparedness people did in New Madrid—you're ignoring that these things have a life of their own."

Kerr concludes with a list of three other recent and prominent earthquake prediction hysterics following the same formula and asks, in effect, if seismologists will finally get their act together now. Browning died in July 1991, but his legacy did not.

Kerr's report is a tidy summary of what NCSE tries to do and why we try to promote scientific literacy BEFORE crises, not just afterwards. It also nicely summarizes the kinds of problems professional "benign neglect" or aloofness can exacerbate. □

## Church Criticizes Evolution but Endorses Academic Freedom

In June, the Synod 91 meeting of the Christian Reformed Church voted 95-82 that the possibility of evolution from non-humans is contrary to the Bible. The decision worried Church academics who feared it would interfere with academic freedom at its colleges. Conservatives, however, cheered their victory. However, the following day, the Synod reaffirmed its support for the teaching and writing of physics professor Howard VanTill of Calvin College. They added language to state that the earlier vote should not be taken as inhibiting the freedom of speech and research by Church members. As noted previously in *Reports*, Van Till has drawn fire for his views such as "Old Earth" creationism which accepts the Bible but not Bishop Ussher's recent creation idea. In another blow to conservatives, the Synod also reaffirmed its 1990 decision to allow women ministers and elders in the 315,000-member Church. The conservative faction left the Synod declaring the decisions contradictory, confusing and unacceptable, and further battles are expected.

## Yet Another Cosmology

According to a complicated letter in the June 15th *Hampshire Gazette*, "The universe had no beginning and no end. The 'Big Bang' occurred when our star was broken up into planets." This happened because the spiritual beings on or in the sun aspired to be like God, and this transgression did not go over well, apparently.

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the field to  
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big  
mistake."  
~

## Supreme Court to Challenge Lemon Decision?

*Eugenie C. Scott*

All of the prominent court cases involving the creation/evolution controversy have been decided at least in part on a 1971 Supreme Court decision, *Lemon v Kurtzman*. The *Lemon* test, as it is called, involves judging a law or activity on three points: 1) does the law have a secular purpose; 2) does the law have a secular intent; and 3) does the law require unacceptable entanglement between religion and the state.

The recent Supreme Court case, *Edwards v Aguillard*, for example, was decided on the purpose prong of *Lemon*: the purpose of the legislation requiring the teaching of creationism in Louisiana was to advance religion. *Lemon* has figured in virtually every church/state separation case since 1971.

In March, the Supreme Court decided to hear a graduation prayer case from Providence, RI, *Lee v Weisman*. The district court of appeals in that case ruled that such prayers violate the first amendment's establishment of religion clause, based in *Lemon v Kurtzman*. The Bush Justice Department wrote a brief to the Supreme Court encouraging it to hear the case, and to look carefully at the *Lemon* test as a foundation for first amendment establishment cases. The Court is expected to hear the case this fall.

Already, several justices have indicated a willingness to tamper with *Lemon*. In his infamous dissent to the *Edwards v Aguillard* creationism case, Justice Scalia took pains to sharply criticize the purpose prong of *Lemon*, stating that abandoning *Lemon*'s purpose test, "a test which exacerbates the tension between the Free Exercise and Establishment Clauses, has no basis in the language or history of the amendment . . ." would be a good place to start.

Chief Justice Rehnquist, in dissent in *Wallace v Jaffree*, said that the purpose prong is a constitutional theory [that] has no basis in the history of the amendment it seeks to interpret, is difficult to apply and yields unprincipled results.

Justices O'Connor and Kennedy are soft on *Lemon*, and, as usual, no one knows where Justice Souter stands.

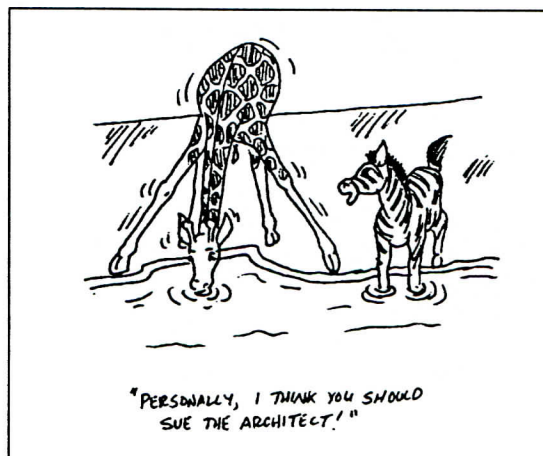
Future legal decisions about creation and evolution and other church/state separation issues could be significantly affected by what the Supreme Court does in *Lee*. NCSE will keep you informed.

## Peloza Lawsuit Update

On August 5, the Orange County (CA) school district rejected a claim of \$5,000,000 against it filed by teacher John Peloza (see *Reports*, 11[2]:1). Peloza had been reprimanded by his district for teaching creationism. Last spring, Peloza promised to file a first amendment (freedom of speech) lawsuit if the district refused to pay the monetary award filed in civil court, and such a suit was filed September 30th.

Meanwhile, the Citizens for Excellence in Education held a public information meeting at the high school August 28, just before the opening of school, apparently to rally support for Peloza and his upcoming lawsuit. NCSE members attended, and report that the meeting consisted of about 50 people, most of whom seemed hostile to Mr. Peloza's views. A comic highlight (to us) was Peloza's statement that evolutionist S.J. Gould supports his views. NCSE member David C. Wise reports that "somebody asked if Gould would be called to testify on Peloza's behalf." Peloza's lawyer doubted that Gould could be subpoenaed. Alternately, in our view, it appears exceedingly unlikely that the lawyer would put the outspoken and articulate Gould on the stand if he could help it!

Letters to the editor, pro and con, continue to be published in Orange County newspapers. In response to a pro-creation letter, David Wise wrote, "If 'evolution versus creation' were indeed a boxing match, as Ringer suggests, then not only has creationism failed to lay a glove on evolution, but it hasn't even gotten into the ring yet to take a swing. Instead, creationism spends all its time shadow-boxing against an imaginary opponent, its 'evolution model,' a strawman that has nothing to do with evolution" (*Orange County Register*, 8/19/91).





# News

the issue. Although four of the school board members had indicated they did not think scientific creationism would qualify as science, it was nonetheless important that the workshop be held. Without it, the creationists could claim that they never got their hearing, and could have claimed discrimination.

Pre-meeting maneuvering included the formation of coalitions for and against creationism. A local anti-creationist coalition, Concerned Lake County Taxpayers for Separation of Church and State, was joined by a state and national coalition spearheaded by the Florida Education Association and other educational groups.

On the other side was the "Coalition for the Secular Theory of Special Creation," which included local creationists, plus Stephen D. Hurm, a lawyer from the Rutherford Institute of Florida, and Dr. Richard D. Lumsden, a recent addition to the Institute for Creation Research. This coalition sent a telegram to the state director of the National Association for the Advancement of Colored People stating, "I have enclosed two pages which clearly show that . . . the evolutionary theory proved white superiority. Creationists are strongly anti-racist" (*Lake Sentinel*, 5/12/91, p. 1.)

NCSE member Dr. Linda Wolfe, an anthropologist from the University of Florida, was invited by the Board (at Rev. Yohn's suggestion) to speak on behalf of evolution. Wolfe's testimony and that of the other pro-evolutionists encouraged the Board to vote 4-1 against introducing creationism into the Leesburg curriculum. The Board was not swayed by the attempt to make creationism secular.

NCSE stands ready to help local individuals combat creationism in their schools. But as Mayor Richard Daley (and NCSE Founder Stan Weinberg!) have said, "all politics is local politics." NCSE cannot substitute for the important work done by local people at the local level. We owe great thanks to Jim Hill, Rev. Yohn, Glen Goffin, LeVant DeWolf and others in Leesburg who did not stand by and let their town become a test case for creationism.

Creationism is by no means a settled issue in Florida, but thanks to the people in Leesburg, future communities considering the teaching of creationism will be reminded that in Leesburg, the idea had a fair hearing of both sides, and was rejected. Thank you, Leesburg! □

## Allan Wilson Dies

Molecular biologist Allan Wilson died in July 1991. A professor at Berkeley, Wilson was one of the revolutionaries of modern genetics as coinventor of the so-called "molecular clock," a means of gauging the distances between species—the timing of evolutionary divergences. He worked notably with Vincent Sarich, the Berkeley anthropologist, to refine his techniques, so his work was applied even more energetically than it might otherwise have been to human evolution. His research generated controversy—most notably Morris Goodman's dissent on the issue of how accurate and independent the "clock" was and thus how exactly it should be used, but virtually no one questioned its basic validity as a means of measuring genetic distance. It added a clear and testable time element to evolutionary cladistics which had been criticized as ahistorical by some scholars (avidly quoted by antievolutionists, of course).

Considering the revolutionary nature of his work he was fairly little-known to the public, despite his pivotal position in modern genetics. Wilson and his work are profiled to some extent in Delta Willis's book, *The Hominid Gang*, and in Roger Lewin's *Bones of Contention*.

## Radiocarbon Dating Discoverer Dies

Nobel Laureate Edwin McMillan, co-discoverer of Plutonium and Neptunium, died 6 September 1991 at age 83. He is generally accepted as the discoverer of Carbon-14, one of the most important radiometric dating techniques in archaeology and the prototype for all of the other radiometric techniques. For 15 years until his retirement in 1973 he headed the Lawrence Berkeley Laboratory. He received the Atoms for Peace Award along with a scientist from the USSR. In 1990 he was awarded the National Medal of Science, America's highest honor for a scholar.

## James B. Irwin dead at 61

Ex-astronaut James B. Irwin died of heart failure 8 August 1991. After walking on the moon in 1971, Irwin retired from the astronaut business to devote his time to the work of an evangelical Christian organization he founded, High Flight. In recent years he led two expeditions searching for Noah's Ark on Mount Ararat. Perhaps needless to say, he was unsuccessful.

## B o o k s

LIST    MEMBERS

Berra, <i>Evolution and the Myth of Creationism</i>	7.95	6.35
Birx, <i>Interpreting Evolution</i>	*29.95	24.00
Crypton (Hoffman), <i>Visitors from the Red Planet</i>	7.95	6.35
<b>NEW</b> Dalrymple, <i>The Age of the Earth</i>	*49.50	39.50
Dawkins, <i>The Blind Watchmaker</i>	8.95	7.15
Dietz and Holden, <i>Creation/Evolution Satiricon</i>	9.95	7.95
†Ecker, <i>The Dictionary of Science and Creationism</i>	*32.95	26.35
Edey and Johanson, <i>Blueprints</i>	*19.95	15.95
Eve and Harrold, <i>The Creationist Movement in Modern America</i>	11.95	9.55
Godfrey, <i>Scientists Confront Creationism</i>	9.70	7.75
<b>NEW</b> Gould, <i>Bully for Brontosaurus</i>	*22.95	18.35
Gould, <i>Ever Since Darwin; The Panda's Thumb</i>	5.95	4.75
Gould, <i>Hen's Teeth and Horse's Toes</i>	6.95	5.55
Gould, <i>Flamingo's Smile</i>	8.95	7.15
Gould, <i>Wonderful Life</i>	*19.95	15.95
Harold and Eve, <i>Cult Archaeology and Creationism</i>	*20.00	16.00
Harris, <i>Agents of Chaos</i>	12.95	10.35
Horner, <i>Digging Dinosaurs</i>	*17.95	14.35
Larson, <i>Trial and Error</i>	9.95	7.95
Lewin, <i>In the Age of Mankind</i>	19.95	15.95
Lewin, <i>The Thread of Life</i>	*29.95	23.95
McCollister, ed., <i>Voices for Evolution</i>	5.00	4.00
McGowan, <i>In the Beginning... A Scientist Shows Why the Creationists Are Wrong</i>	16.95	13.55
McIver, <i>Anti-Evolution, An Annotated Bibliography</i>	*39.95	33.95
Montagu, <i>Science and Creationism</i>	14.95	11.95
Morris, <i>Biblical Basis for Modern Science</i>	*24.95	19.95
Morris, <i>Genesis Record</i>	*24.95	19.95
Morris, <i>The Long War Against God</i>	*21.95	17.55
<del>Price, <i>The Creation Science Controversy</i></del>	<del>9.95</del>	<del>7.95</del>
Ruse, <i>But is it Science?</i>	*26.95	21.56
Smith, <i>Did Darwin Get it Right?</i>	*25.00	20.00
Stein, <i>The Evolution Book</i>	12.95	10.35
Stein, <i>The Science Book</i>	9.95	7.95
†Strahler, <i>Science and Earth History, the Evolution/Creation Controversy</i>	*44.95	36.00
UNESCO, <i>700 Science Experiments for Everyone</i>	*13.95	11.15
VanDiver, <i>Imprints of Time: The Art of Geology</i>	19.95	15.95
Van Till, Young, and Menninga, <i>Science Held Hostage</i>	9.95	7.95
Willis, <i>The Hominid Gang</i>	*21.95	17.55

### Kids Books

<b>NEW</b> Barker, <i>Maybe Yes, Maybe No</i>	11.95	9.55
<b>NEW</b> Haught, <i>Science in a Nanosecond</i>	12.95	10.25

†Special shipping fee—see Order Form at right  
\*cloth

## NEW Books

### Bully for Brontosaurus

Stephen Jay Gould

Collected essays from Natural History on a wide variety of topics, including five on the creation/evolution controversy. Must reading for all Gould fans, and likely to make new fans out of newcomers.

### The Age of the Earth

G. Brent Dalrymple

Dalrymple's long-awaited, nontechnical explanation of how we know how old the earth is. A straightforward presentation of the evidence and logic leading scientists to conclude that the earth is 4.5 billion years old.

### Maybe Yes, Maybe No

Dan Barker

A child's guide to skepticism. Ten year old Andrea skeptically analyzes a claim that ghosts are moving dishes and making noises at a friend's house. Encourages critical thinking and offers some rules for thinking for yourself. Author Barker is editor of *Freethought Today*.

### Science in a Nanosecond

James A. Haught

100 basic science questions clearly answered for children and the rest of us. Why is the sky blue? What holds an airplane up in the sky? Illustrations. Sixth grade on up.

## Poster

### Smithsonian Chart of Animal Evolution

27" x 39 3/8". Accurately and thoroughly shows relationships between terrestrial and aquatic, extinct and extant groups. Geological scale.  
List: \$12.00  
Member: \$10.00

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Center  
for  
Science  
Education



**Evolutionists do it . . .  
with increasing complexity!**

Bumpersticker #1

## NEW Diskettes

NCSE now offers computer diskettes on topics of interest to our members. To order see list at right.

### The Origin of Theses A Look at the Quality of Two Theses from the Institute for Creation Research Graduate School

Kevin Henke

An analysis of two masters theses in geology "highly praised" by ICR officials, but sadly lacking in scholarlyness, according to Henke. Discusses why the works fail as science and as geology.

### An Evolutionist Goes to the Creationist Movies

Frank J. Sonleitner

Analysis of 10-part "Origins" movie series. Counter arguments to the Flood, human evolution, thermodynamics, etc. References.

### What's Wrong with Pandas?

Frank J. Sonleitner

Meticulous, almost page by page analysis of creationist textbook, *Of Pandas and People*. References.

## NEW Debate Transcript

### Duane Gish/Fred Parrish

Gish/Parrish transcript from 5/6/91 debate. Lots of humor.

## NCSE Bumperstickers

See examples at left and right.  
\$3 each, shipping included.

## Audio Cassettes

### Symposia

#### 1989 Annual Meeting, Full Symposium

"Only a Theory"

2 tapes 10.00

#### 1982 AAAS Pacific Division Symposium

"Evolutionists Confront Creationists"

John Patterson, *Probability & Thermodynamics*

1 tape 4.00

Robert Root-Bernstein, *History & Philosophical Issues*

1 tape 4.00

Russell Doolittle, *Origin of Life*

1 tape 4.00

Brent Dalrymple, *Age of the Earth*

1 tape 4.00

Joel Cracraft, *Systematics & the Fossil Record*

1 tape 4.00

Vince Sarich, *Human Evolution*

1 tape 4.00

William Thwaites, *General Discussion & Questions*

1 tape 4.00

### Debates

1977 Awbrey/Thwaites/Morris/Gish

3 tapes 15.00

1979 Milne/Gish

2 tapes 10.00

1982 Awbrey/Thwaites/Kofahl/Chui

3 tapes 15.00

1987 Fezer/Doughty

2 tapes 10.00

1988 Thwaites/Gish

3 tapes 15.00

1988 Saladin/Gish

2 tapes 10.00

### Lecture

1976 K. Mather, *The Scopes Trial*

1 tape 4.00

## Diskettes

DOS compatible, 3 1/2" DD, unless otherwise requested.

WordPerfect or ASCII format (please specify)

Henke: Origin of Theses

\$10.00

Sonleitner: Creationist Movies

\$5.00

Sonleitner: What's Wrong with Pandas?

\$5.00

Price includes shipping

## Transcripts

1984 Saladin/Gish

8.00

1987 Bakken/Gish

5.00

1988 Saladin/Gish Debate II

10.00

1989 Zindler/Morris (Noah's Flood)

4.50

1990 Zindler/Gish

5.00

1991 Parrish/Gish

7.00

### ORDER FORM

Quantity	Description	Price
(attach additional pages, if needed)		Subtotal
Shipping: Books: \$1.50 (add \$1 for each additional book) \$2.50 (Strahler and Ecker books) Cassettes, transcripts: 1-3 \$1.25 4-5 \$1.75 6+ \$2.00		Tax: CA residents add 8.25%
Foreign Orders: We will invoice shipping costs		Subtotal
Send checks to NCSE, P.O. Box 9477, Berkeley CA 94709		TOTAL
Name: _____		
Address: _____		
City/State/Zip: _____ Phone: _____		

National  
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**HONK! IF YOU UNDERSTAND  
PUNCTUATED EQUILIBRIA!**

Bumpersticker #2

# Resources

*This section briefly notes publications of interest without necessarily endorsing or criticizing them. Where indicated, copies are available from the NCSE Resource Center for nominal charges.*

Additional information: *Sim-Earth*, a computer program simulating evolution listed in *Reports* 11(1) is distributed by Broderbund, 17 Paul Drive, San Rafael, CA 94903. (1-800-521-6263). Available for either Mac or DOS, \$69.95 retail. It's reviewed in the July 1991 *Compute*.

AAAS (various authors). 1991. Careers in Science. Multi-article section of *Science* Vol. 252 (See p. 17).

Aviezer, Nathan. 1990. *In the Beginning . . . ; Biblical Creation and Science*. Hoboken, NJ: KTAV Publishing House, Inc. 138 pp, \$15.95. A professor of Physics at Bar-Ilan University and self-described "observant Jew," the author attempts to reconcile Genesis with modern science via the Day-Age theory and the idea that Genesis describes the advent of the Neolithic as far as humans are concerned, not hominid origins. Relies heavily on his view of punctualism and "gaps" plus Jewish rather than Christian traditions—Talmudic-style questions and answers which reconcile things with Scripture after all.

Barthel, K.W., N.H.M. Swinburne, and S. Conway Morris. 1990. *Solnhofen: A Study in Mesozoic Paleontology*. NY: Cambridge University Press. 236 pp., illus. \$59.50. The paleontology of the fabulous fossil deposit (a quarry) where *Archaeopteryx* was found.

Bernard, Victor. 1991. Then a Miracle Occurs. *Free Inquiry* 11(3): 31-37. Delightful and thoughtful review of the 1990 International Conference on Creationism. SASE + \$1.00 from NCSE.

Boesch, C., and H. Boesch-Achermann. 1991. Dim Forest, Bright Chimps. *Natural History* (September), pp. 50-56. Forest chimps regularly engage in coordinated hunts for monkeys and share the food caught. They also use "hammerstones" for cracking nuts.

Bower, Bruce. 1991. Neandertals' Disappearing Act. *Science News* 139: 360-361, 363 (8 June). The place of Neandertals in the family tree is still debated—and even their identity is.

———. 1991. African Find Moves Ancient Apes Southward. *Science News* 139: 405 (June 22). The

first pre-hominid ape found in southern Africa (in Namibia).

Ciparick, Joseph D., ed. n.d. Creationism in the Federal Courts. A collection of the major creationism legal decisions: Epperson, McLean, Aguillard (all three cases). Available from the editor for \$8.00. 315 E. 86th St., 14CE, NY, NY 10028.

Ciparick, Joseph D., ed. n.d. Documents and articles on creationism. Copies of articles by and about creationists, including articles by Ciparick, Bennetta, Eldredge, et al, plus teachers' guide from creationist text, *Biology, A Search for Order in Complexity*. \$8.00 from author, address above.

*Darwin's Dilemma* is a computer game advertised in various places for \$29 to \$39; we haven't seen it and do not even know the publisher. It sounds like something of interest we should review, so if you have it or acquire it, please send us a brief evaluation.

Degler, Carl N. 1991. *In Search of Human Nature: The Decline and Revival of Darwinism in American Social Thought*. NY: Oxford University Press. NY Times called it "splendid," etc; we haven't seen it.

Fisher, Arthur. 1991. A New Synthesis Comes of Age. 1: Birth of a Paradigm; 2: How Different Are Humans? *Mosaic* 22(1): 2-17. (Popular-style magazine published by National Science Foundation) A two-part review article on sociobiology after 16 years. Mostly pro-, but critics are noted.

Freedman, David H. 1991. A Chaotic Cat Takes a Swipe at Quantum Mechanics. *Science* 253: 256, 9 August. A news report on chaos theorist Joseph Ford of the Georgia Institute of Technology who is devising tests which he says may provide evidence that quantum theory can make wrong predictions. (Einstein thought it was weird but never devised any workable tests, and it has passed prediction tests up to now.)

Gilovich, Thomas. 1991. *How We Know What Isn't So: The Fallibility of Human Reason in Everyday Life*. NY: The Free Press. 216 pp, \$19.95. Astute analysis of why people believe in things despite rational arguments to the contrary, and the survival value of making sense out of things even when there is in fact no sense or order. Perhaps implicitly an analysis of the limits to rational discourse which NCSE champions.

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Aviezer—a  
Jewish  
old-earth  
creationist  
view  
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# Resources

Gleick, James. 1991. *Chaos: The Software*. PC-compatible software developed to explore fractals, strange attractors, etc. \$59.95 from Autodesk, Inc., 2320 Marinship Way, Sausalito, CA 94965. (1-800-688-2344) Not reviewed by NCSE. (If you have tried it, we'd appreciate a brief review.)

Gould, S.J. 1991. Opus 200. *Natural History* (August), pp. 12-18. NCSE Supporter Gould gives an updated account and explanation of punctuated equilibrium.

Grajal, A., and S.D. Strahl. 1991. A Bird with the Guts to Eat Leaves. *Natural History* (August), pp. 48-55. Discussion of the Hoatzin, a bird often cited by creationists disputing the nature of Archaeopteryx.

Kapitza, Sergei. 1991. Antiscience Trends in the Soviet Union. *Scientific American* 265(2): 32-38 (August). Antiscience and antitechnology are on the rise in the USSR where ESP, astrology, etc. are part of a reaction against traditional communism. SASE + \$1.00 from NCSE.

Kauffman, Stuart A. 1991. Antichaos and Adaptation. *Scientific American* 265(2): 78-84 (August). Argues that the math theory of antichaos (complex disorder crystallizing suddenly into order) is an important addition to traditional evolutionary theory. SASE + \$1.00 from NCSE.

Knight, Kathryn Lasky. 1991. *Mortal Words*. NY: Pocket Books. Nifty mystery novel describing the creationist-evolution debate very well. See Letters for a mini-review.

Li, Wen-Hsiung and Dan Grauer. 1991. *Fundamentals of Molecular Evolution*. Sunderland, MA: Sinauer. xviii + 284 pp., illus., paper. \$22.95. A "natural history of the genome" and "testament to the power of evolutionary theory," according to a *Science* review. Quite technical.

Lovelock, James E., et al. 1991. Letters to *Science* critical of news coverage of Lynn Margulis in an earlier issue and noted in the previous *Reports*. (Received 21 June '91 without volume or pagination) Gaia further defended and attacked. Both items available from NCSE for SASE + \$0.50.

May, R.M. 1991. A fondness for Fungi. *Nature* 352: 475-476. Discusses recent estimates that there may be 1.6 million species of fungi. It seems strange that the Creator would produce such a diversity of

feeders on dead bodies to populate a creation devoid of death.

Mayr, Ernst, and Peter D. Ashlock. 1991. *Principles of Systematic Zoology*. NY: McGraw-Hill. 2nd edition of a classic, technical work.

McCrone, John. 1991. *The Ape That Spoke; Language and the Evolution of the Human Mind*. Camp Hill, PA: Quality Paperback Book Club. 288 pp, \$9.95 (\$19.95 hardcover). Controversial but well-regarded by many science writers.

Mitchell, Melanie, and Merry Doolley. 1991. *Dinosaur Activity Book*. Denver Museum of Natural History/Roberts Rinehart, Inc. \$12.50, 32 pp. Activity and make-a-mask book for kids: masks, pteranodon glider, flash cards, games.

Monastersky, Richard. 1991. The Lonely Bird. *Science News* 140(7): 104-105. Discussion of "Protoavis," a possible early bird predating *Archaeopteryx* which concludes that more evidence is needed before the latter is knocked off its perch. SASE + \$0.50 from NCSE.

North Carolina Museum of Life and Science. 1991. *Sharing Science with Children: A Survival Guide for Scientists and Engineers*. Booklet of hints for how professional scientists can be effective in the K-8 classroom. FREE from NCSE while supplies last, but send \$0.75 for postage and handling (NOT an SASE).

Rayl, A.J.S., and K.T. McKinney. 1991. The Mind of God. *Omni* August 1991, pp. 42-48. A jumble of interviews with scientists and others pursuing the question of whether science can prove or disprove that there is a divine being overseeing the universe. (Most say it's outside the realm of science.)

Ross, Robert M., and Warren D. Allmon, Eds. 1991. *Causes of Evolution: A Paleontological Perspective*. Chicago: Univ. of Chicago Press. 479 pp., illus. \$65.00. Technical papers.

Strahler, Arthur N. 1991. The Creationist Theory of Abrupt Appearances: A Critique. *Free Inquiry* 11(3): 37-44. Insightful review of Wendell Bird's *The Origin of Species Revisited*, the new legal "handbook" of the creationist movement. Review available from NCSE for SASE and \$1.00.

Resources, continued on p. 17

## Why Resorting to the Supernatural Isn't Done in Science

Karl D. Fezer  
Professor of Biology  
Concord College, Athens, WV

Scientists know that explanations with supernatural components are outside the domain of science. John Q. Public often has trouble understanding why this should be so. Creationist arguments further muddy the waters.

Most "creation scientists" acknowledge the distinction between natural processes and the supernatural ones they say must also be invoked to understand the world in which we live. However, Professor Lane Lester, at Jerry Falwell's Liberty University once told me that, to him, God and his works are real and true in the same sense as natural phenomena, and that, therefore, there is no distinction between the natural and the supernatural. In this view, the only distinction is between the true and the false. Either way, "creation scientists" mix talk of God with talk of natural processes.

A moment's reflection on Lester's formulation shows that the immediate question is not "What is true?" but rather "How can we determine what is true?" (Or "How can we decide what makes the most sense?") Science and "creation science" answer in very different ways. They represent different systems of thought whose premises, rules of thought, and goals differ drastically. So it is no surprise that often they arrive at different conclusions.

To really understand the conclusions of a system of thought it is necessary to see those conclusions are constrained by the system's premises, rules, and goals. To communicate clearly people should identify (and explain, when necessary) the system or systems of thought that generate their assertions. In their public utterances, scientists, for example, should be careful to distinguish personal religious or philosophical beliefs and speculations from scientific conclusions based upon well-established method, theory and data.

Science does not claim to have answers to all questions. But answers it does provide are certain to be natural ones.

Natural descriptions and explanations invoke only scientifically well-accepted components, no matter

how exotic or innovative the result. Thus Darwin's novel proposal of change by means of natural selection was based on clear-cut observations, well-established concepts, and logic. These are the kinds of things that, taken in isolation, even most "creation scientists" might agree to. The scientific case for evolution consists entirely of *components* that many creationists can accept. They reject the *conclusion* that life evolved because they see it as incompatible with their system of thought. To justify this rejection they often misrepresent components of the argument for evolution.

Supernatural descriptions and explanations invoke components rejected by at least a substantial fraction of scientists. For example, we can agree that humans have purposes and exhibit intelligence allowing them to create things that serve their purposes. It is appropriate to invoke these concepts when explaining human behavior. However, there is no unambiguous evidence that intelligence exists independently of a brain, so to invoke a brainless yet purposeful superintelligence as creator of the "machinery" of nature is far from compelling science; it is based on a weak analogy with human activity. While many scientists personally accept the existence of such a superior intelligence, others do not. There is general agreement that this debate about supernatural concepts lies outside the domain of science and that such concepts cannot serve as components or building blocks of scientific explanation.

Persuaded that a natural explanation answers the same questions as a supernatural one, not just scientists prefer the natural explanation. Fundamentalist theologians acknowledge this when they invoke the "Economy-of-Miracle Principle." Natural explanations invoke known cause-effect relationships whose explanatory adequacy in each case can be evaluated. Supernatural explanations, because they can be invoked to explain anything, are neither specific nor testable. For example, when inconsistent behavior is attributed to God, this can be rationalized on the grounds that God is beyond human understanding.

Selection acting on mutations has been demonstrated to be a powerful creative force in

# Incredible Creationists

nature. It is one of many kinds of evidence that together have persuaded scientists that diverse organisms share common ancestors. This not only has challenged the concept of special creation, it also has weakened some perceived needs for any kind of direct divine involvement in the origin of species. However, it does not rule out the *possibility* of divine involvement.

The number of *possible* descriptions of the world is infinite. Science seeks to identify statements that are *probable*, and more than that, *compelling* to rational, thoughtfully critical, well-informed people everywhere in the world. Science seeks to build conceptual and descriptive structures that will appeal to such people. A chain of reasoning is no stronger than its weakest link. Therefore, before it is accepted, each component of a scientific explanation should be clearly defined, demonstrated, and documented. It should be testable and able to pass the tests. Supernatural concepts do not command universal assent because they do not meet these conditions. On the other hand, basic tenets of science take root and thrive in extremely diverse cultural and religious settings among people with vastly different ideologies.

Creationists argue that scientists do not know how life originated, and that it could not have originated naturally. Therefore, they say, a supernatural creator must have been involved. Perhaps so, but we do know many phenomena that may become components of a persuasive, comprehensive, natural theory of the origin of life. It is true that science has not yet produced such a theory that is generally-accepted. This is not surprising, since many steps would have been involved. Furthermore, it is difficult to know precisely what kinds of conditions prevailed on earth three to four billion years ago and in which of those circumstances life originated. All science can do is assume that life originated naturally and continue to search for those natural processes. This much is certain: if life did arise through natural processes, they will not be discovered by assuming they were supernatural.

Science must continue to search for the best possible natural explanations. Adopting supernatural explanations would change and weaken the system of thought called science. Meanwhile the individual person remains free selectively to assemble his or her worldview from the claims of diverse systems of thought. □

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Science  
does not  
claim to  
have  
answers to  
all  
questions.  
But answers  
it does  
provide are  
certain to  
be natural  
ones.  
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## Resources *continued from p. 15*

Travis, J. 1991. Electronic Ecosystem. *Science News* 140: 88-90 (10 Aug). U of Delaware's Thomas Ray's computer simulations are described. These self-replicating programs evolve by means of the neoDarwinian mechanism of mutation, reproduction and selection. Initiated with a single "ancestor," the system quickly diversified into a variety of creatures, including parasites.

Ulansey, David. 1989. *The Origins of the Mithraic Mysteries: Cosmology and Salvation in the Ancient World*. NY: Oxford University Press. \$8.95, paperback. Story of the secret Christian society of Mithraism—a Roman cult trying to integrate theology and astronomy in the ancient world.

Waldrop, M. Mitchell. 1991. Despite Reports of its Death, the Big Bang is Safe. *Science* 251: 272-273. A news report on the significance of the new view of Cold Dark Matter to the BB which is far from dead, despite some criticism. SASE + \$0.50 from NCSE.

### Science Careers

A special supplement to *Science*, the magazine of the American Association for the Advancement of Sciences, has been edited by Constance Holden to advise teachers and students. Specific fields, trends, and individual career summaries make this a good primer for the neophyte—and perhaps even better for the teacher or advisor of neophytes. Individuals tell "how to make it" in their fields, economic and social trends are examined, technology for the next decade is examined, and corporate, government, and academic science trends and prospects are explored.

*Entitled "Science Careers," it appears in the 24 May 1991 issue, vol. 252: 1110-1152. It is also available as an offprint for \$1.25 + \$1.50 handling; bulk rates are available. Write Corrine Harris, AAAS, 1333 H Street, NW, Washington, DC 20005 (202-326-6527).*

# Keeping Tabs

## Louisiana Contra Temps: Or, Where's the Beef?

In January, Lafayette, LA hosted a convention of beef producers (which the January 12th *Baton Rouge Morning Advocate* referred to as "cattle farmers"). "Animal Rights" advocates from PETA ("People for the Ethical Treatment of Animals") and ACT ("Animals Count, Too") picketed, protested and received news coverage.

The Louisiana Cattlemen's Association spokesperson Mansel Slaughter (I'm not making any of this up!) said he had no comment on the protests.

Others did.

Protest spokesperson Robbie LeBlanc was quoted in the *Advocate* on the 12th as saying "By nature, humans are vegetarians. . . . Our closest relatives, the apes, are vegetarians."

A lively and lengthy debate ensued in the newspaper which rapidly changed from the merits and etiology of vegetarianism to a debate about whether or not humans are related to apes and whether evolution is nonsense. The role, if any, of meat in Cajun and Creole cuisine was very quickly lost in the argument although not in local recipes.

More than one correspondent noted that chimps have been documented eating meat and that humans have been long-time omnivores. (See C. Boesch and H. Boesch-Achermann, 1991, in this month's Resources section; they describe organized chimp hunting for meat.) Whether or not humans have a basic urge or need to consume meat protein is, in fact, a serious argument in anthropology, but virtually no anthropologist asserts that meat is traditionally absent from the human diet. Rather, anthropological data show that meat has often been rather scarce. It is a complete protein usable by the human digestive tract; "man the hunter" as our ancestor is now downplayed as an exaggeration of the dominance of hunting, not the *existence* of hunting or meat-eating in human antiquity.

Evolutionary relationships with apes came in for quick question in the *Morning Advocate*; a T. Med Hogg criticized the animal rights people and the defenders of human phylogeny on February 28th, arguing that evolution is still just a "theory." On March 8th, Henry Murry of the Baton Rouge Proponents of Rational Inquiry and Scientific

Method ("PRISM") weighed in, criticizing Mr. Hogg for being blinded by antievolutionist dogma.

Mike Fuselier of St. Martinville wrote on April 5th to defend creationism by raising issues such as "Nebraska Man" but emphasizing the Second Law of Thermodynamics as proof against evolution.

There were other correspondents.

The following three letters to the *Advocate* are reprinted with authors' permissions.

Robert Svoboda of Baton Rouge wrote April 20th:

*I was intrigued to see the Second Law of Thermodynamics invoked by Mr. Mike Fuselier as an argument as to why the Theory of Evolution is incorrect.*

*Though I am not an expert in anthropology and certainly not familiar with the latest in biochemistry, I do know something about thermodynamics. My experience has been both practical (as a nuclear power officer on a Navy submarine) and academic (I now teach basic physics to engineering students at LSU).*

*For readers who have not taken my class, the Second Law states that the entropy of a closed system either remains constant or increases. Entropy is a mathematical quantity, sometimes described as "disorder," and a system is any volume of space selected for engineering analysis [as small as a piston cylinder or as big as the universe]. A closed system is a very special kind of system which is thermally isolated from the rest of the environment.*

*[Consider] a perfectly insulated cup of water in which you are about to dissolve a lump of sugar. As the sugar cube melts away into the water, you could say (and you would be mathematically correct) that the water-sugar system has become more disordered—its entropy has increased. The cube of sugar will never reform at the bottom of the cup.*

*This is not to say I can never decrease the entropy of the water-sugar system. If I make the system "open" by adding enough heat to boil off the water, the sugar will recrystallize. We decrease the entropy of open systems all the time—everyone does it when making ice in the*

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freezer. It also happens naturally whenever it rains (disordered water vapor turns to more ordered liquid) or it snows (everyone has seen pictures of the beautiful order in ice crystals or snowflakes). Indeed, our own sun shines by converting simple atoms (hydrogen) into more complex ones (helium, carbon, oxygens, etc.). Thus I don't understand Mr. Fuselier's thermodynamic reasoning. The Second Law of Thermodynamics has no bearing on the question of evolution. I suspect his objections are based more upon his disappointment in [the fact] that it seems the universe (and us along with it) were created in a manner inconsistent with his interpretation of the Bible. My personal opinion (not very scientific) about the origin of the universe is that I am perfectly happy with the idea of the Big Bang followed by slow evolution of life over many millions of years. It seems to me a fine way to create a universe, and I have no real complaints. Those who do should direct them to the Chief Designer, as I am sure He will be interested in their suggestions.

Bob Walters, a syndicated columnist from St. Joseph, LA, replied May 1st.

The views expressed by Mr. Svoboda in the April 20 SATURDAY edition in which he argues the laws of thermodynamics do not apply to evolution is one of the most amusing, nonsensical dissertations I have ever read. My old grandfather used to say, "Nothing is more amusing than listening to an educated man trying to outguess God!" I agree. Of course the laws of thermodynamics do not apply to evolution! Evolution is a cock and a bull story from the beginning! Not a single serious scholar that I am aware of will go so far as to argue that evolution is a science! Of course, it is not a science. It is a bag of disconnected, confused and imaginary theories that conflict with themselves. Perhaps you should read Philip Johnson's book concerning fossils and fallacies. Mr. Johnson is a law professor at the University of California-Berkeley campus who thoroughly shows evolution for the complete farce it is by simply applying a little reason and logic! Perhaps Mr. Svoboda will explain for us how the eye evolved and how, according to the

process of natural selection, it occurred spontaneously and all at once.

It is my unqualified opinion that Mr. Darwin was the second biggest idiot that ever sojourned upon Earth! The first, of course, was Sigmund Freud!

One May 11th letter criticized the *Morning Advocate* for failing to identify Mr. Walters' letter as a humor column. Another, by NCSE member Grant Smith of Baton Rouge, tried to summarize the debate.

It all started innocently enough. The *Morning Advocate* quoted an animal rights activist as saying our closest living relatives, the apes, are vegetarians. A letter . . . soon followed that pointed out that while it is true that chimpanzees, members of the ape family, are our closest relatives, they are definitely not vegetarians.

The matter could have ended there, but a series of letters ensued in which several creationists attacked the scientific validity of evolution in general and our kinship with chimps specifically. These attempts to reinstate an 18th century view of the natural world were ably rebutted by

letters from scientifically literate members of the public.

The most recent creationist letter prompts me to join in the fun. . . . Bob Walters wrote, "Not a single serious scholar that I am aware of will go so far as to say that evolution is a science!" How can he be unaware that the scientific community is essentially unanimous in considering evolution as valid and uncontroversial as the fact that the earth is round, 4.5 billion years old and orbits the sun? My conclusion is that Bob Walters/Van Winkle may be beyond help, but those misled by his views should consider the following:

- In 1986 72 [American] Nobel Prize-winning scientists and 24 scientific organizations filed a "friend of the court" brief with the U.S. Supreme Court in which they upheld the concept of evolution and urged the court to rule against the Louisiana law that required the teaching of "creation science" in public science classes. In 1987, the [Supreme] Court agreed that "creation science" is so religious

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and unscientific that it should not be taught in public schools.

- In 1989 the National Center for Science Education published a compilation of pro-evolution/anti-creationism statements entitled *Voices for Evolution* [B. McCollister, ed.]. It contained 68 official policy statements from various scientific, religious, and educational organizations. [Note: available for \$5 from NCSE]
- In countless other places such as scientific magazines and books, scientific programs on public TV, college science textbooks, etc., scientist after scientist explains various aspects of evolution and how it is the basic context in which all biology is understood.

Mr. Walters' willful ignorance of the fascinating three billion year evolutionary history of life on earth is a self-inflicted, but curable, wound. He can read David Attenborough's *Life on Earth* to learn about the wonders of that history [for example]. I wish I could hang around for a million years to see what new wonders will evolve.

One of Mr. Walters' expressed views was particularly amusing. In discussing the scientific status of evolution, who does he cite as an authority? A lawyer! I wonder who he consults about legal problems—a school teacher? An auto mechanic? When you get right down to it, the experts in the field—scientists and philosophers of science, define what science is—and they fully embrace evolutionary biology as science. □

## The Creationist Press

From time to time we try to survey creationist serials for our readers interested in what the anti-evolutionist camp is currently doing. The Summer 1990 *Creation Social Science and Humanities Quarterly*, vol 12, no. 4, has just arrived, and it is rather interesting—in part because it is unabashedly religious in tone and coverage.

Articles included are: Devotional Creation and Worship, Creation and Proof for the Existence of God, Proofs for the Existence of God and Creation: A Catholic View, Poetry: The Voice of Little Things, Abortion and Animal Rights: Two Sides of One Coin, Talk to the Animals, Truth and the Christian Teacher, Training Park Interpreters: Some Guests are Less Welcome than Others, and Man and His Environment: The Creationist Perspective.

The latter advocates "stewardship" but notes that "man" is indeed outside "nature," put in charge with no "gloom and doom" themes needed. The park guide article deplores the supposed evolutionist bias of rangers in Canada and the US who do not welcome balanced debate from the crowds when they talk about dinosaurs and such—seems they tend to think the earth is rather old.

Linking antiabortionism with creationism in the Wichita locale of *CSS&HQ* is rather interesting, since Wichita has been the scene of dramatic news in summer 1991. The US Justice Depart-

ment has essentially challenged the right of a regional federal judge to issue an injunction against disruptions of health clinics by antiabortion protesters; at this writing the issue is unresolved. I should note that we have heard no information linking *CSS&HQ* with the current confrontations and arrests.

*CSS&HS Journal* costs \$12 for people signing a very long version of the standard creationist statement of faith (noted in our last issue), \$14 for those who do not. The address is 1429 N. Holyoke, Wichita, KS 67208. The President and Editor is Dr. Paul D. Ackerman, a psychology professor at Wichita State University who does not speak for the university (an issue your editor pressed about 10 years ago when it seemed to be implied otherwise!).

*The Biblical Astronomer* Volume No. 57, Summer 1991 (formerly *The Bulletin of the Tychonian Society*) is a slim 24 pages. Its articles are "on the Relativity of Rotation," and "Bible and Geocentricity" plus letters, editorial, etc. It has no subscription price but "suggests" a donation of \$12/year; the editor is Dr. Gerardus D. Bouw, 4527 Wetzell Avenue, Cleveland, OH 44109. The editorial suggests that a subscription price may be in the offing soon. Aside from a record number of issues in one volume over 20 years, this journal is, to my knowledge, the only creationist serial devoted exclusively to the issue of geocentricity, although others flirt with the topic—notably the *Bible-Science Newsletter*. □

## Price Book Withdrawn by Publisher

Because of libel charges in Australia, its publisher has taken the extraordinary step of withdrawing from circulation all unsold copies of the book, *The Creation Science Controversy*, by Barry Price. NCSE formerly sold the Australian book but obviously can no longer do so. We apologize to our members who have ordered it. At last report, the publisher's offer to withdraw the book had not satisfied the litigants against Price, nor had a public apology by an Australian television network, so the lawsuit continues at this writing.

NCSE is not in a position to evaluate the legal issues in this case before a court does—especially since the venue is Australia, not the US, and definitions of libel vary quite drastically. We certainly oppose libel but do not assume it until proven.

An article in the next *Creation/Evolution* will examine this case in more detail.

## 1991 Geocentrism Conference Canceled

We hope that anyone who journeyed to the 1991 International Conference on Geocentrism in Cleveland had tickets to an Indians game and a good time at the Cleveland Symphony, Lake Erie Cruise ship tickets, and a guide to the parks, museums and eateries in Cleveland.

The Conference was canceled quietly—sort of confirmed to be not happening when Bob Schadewald called to ask about final arrangements soon before leaving for it! Bob then called several people—everyone whom he suspected might be planning to attend among NCSE members who monitor such things.

No excuse or explanation is at hand.

Perhaps the earth moved?

In any case, their journal continues to appear, even if their conference did not, with its name changed from *The Bulletin of the Tychoonian Society* to *The Biblical Astronomer*.

## AAUW Honor for Johnnetta Cole

The American Association of University Women has awarded NCSE Supporter Johnnetta Cole its 1991 Achievement Award, the organization's highest honor. Dr. Cole is president of Spelman College, an historically Black college for women in Atlanta. An impressive 37% of Spelman students major in science or math.

## New Numbers

The telephone company is running low on numbers. One result is that much of the San Francisco Bay area is being assigned a new area code of 510, leaving 415 for San Francisco. The NCSE office (and the rest of the East Bay) is being converted to 510, although the rest of the number will be the same:

1-510-843-3393

Please make a note; meanwhile, the old and new area codes will both be usable for an interim period.

The NCSE office has moved to larger—and cheaper!—quarters. Our mailing address is still the same:

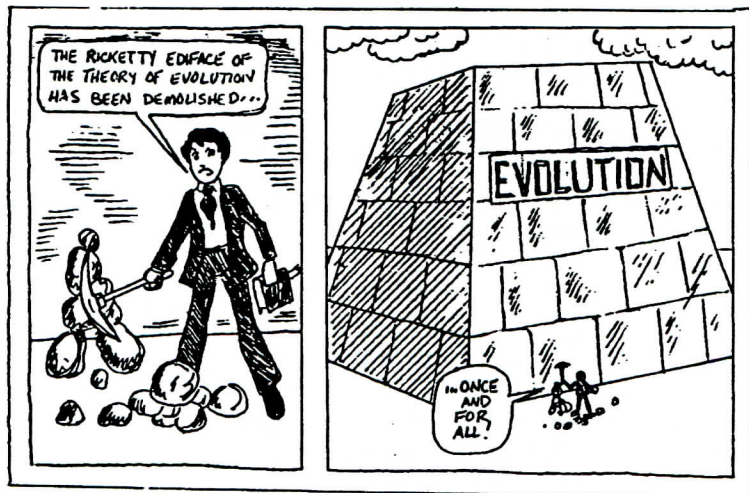
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However, the street address is now:

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## Want a Tax Break?

NCSE is looking for someone (or some company) to donate a computer. Our wants are modest: we'd be happy with an IBM compatible AT (and delerious with a 386, but we're not unrealistic. . .) Is your company upgrading to 386's or 486's, and does it have surplus computers (286 or 386) it is clearing out? A donation to NCSE would be tax-deductible for either an individual or corporation. Please ask around. We are greatly in need of another machine.



## NCSE Liaisons

The following is a list of current NCSE liaisons arranged by states. 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 help.

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