

Inside

2
Editor's Desk

6
News

11
NCSE News

14
Tracking Those
Incredible
Creationists

16
Resources

19
Keeping Tabs

23
Letters



3
Honig Trial
Update

4
Noah's Ark
on CBS



Vista, CA District in Turmoil Over Creationism

Eugenie C. Scott

Last November, citizens in the 21,000-student Vista, CA, school district elected John Tyndale, accountant for the Institute for Creation Research, to a seat on the school board. Tyndale joined two previously-elected religious right members to form a 3-2 majority. Citizens and teachers of this Orange County district prepared for shocks, and not of the seismological variety.

A citizen requested that members of the school board state at the January, 1992 meeting their plans for the science curriculum. The January 21 meeting attracted an estimated crowd of 500 people, which overflowed a room set for 300. Regional and national television and newspaper coverage contributed to a circus-like atmosphere, as those who could not crowd into the room pressed against the windows and doors straining—usually in vain—to hear.

Because of the large number of individuals wishing to speak during the public commentary period, the president of the school board limited each pre-

sentation to three minutes, to the protests of the audience. Several NCSE members were there to speak, including scientists from San Diego State University. Dave Archibald, William Thwaites, Frank Awbrey, Pat Abbott, and others were prepared to testify, but due to the limited time period, only Archibald was able to present his prepared comments. Other NCSE members, including Bob Solomon, were unable to even get inside the door.

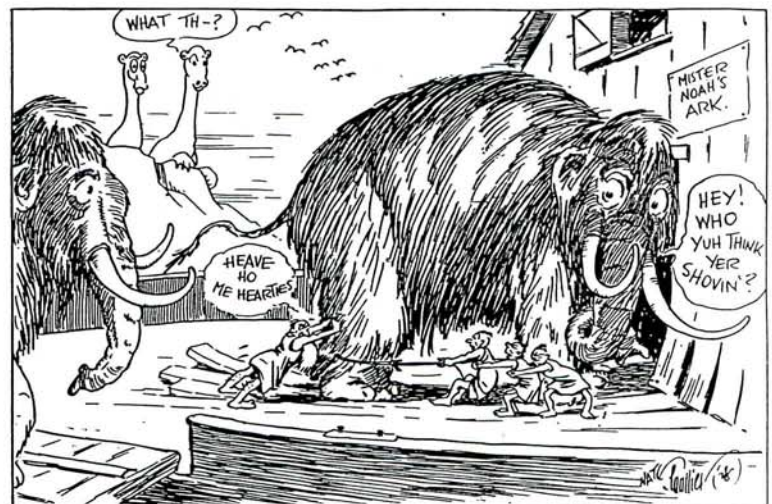
Even prior to the January 21 meeting, several newspaper accounts had reported that the board was already leaning away from teaching creationism as science. The Superintendent of the district opposes teaching creationism as science, and nearly 100% of the science teachers had signed a statement refusing to do so. A local group, the Community Coalition Network, had formed, and was in contact with NCSE. They, along with

Vista, cont'd on p. 5

PAGE SIXTEEN

EVOLUTION

APRIL, 1928



"The Dinosaur and Mastodon became extinct not because of evolutionary changes, but because they were too big to be got into Noah's Ark." Founder and President of World's Christian Fundamentals Association, in debate in Los Angeles.

Editor's Desk

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The cover cartoon is reproduced from the April 1928 *Evolution* magazine, not from CBS Television.

The vast majority of people who support evolution education assume the argument is over and won, while neither is true.

NCSE is pretty good at opposing creationism as science, but it only encounters tips of icebergs—occasional examples of antievolutionism where someone complains to us. It can help local activists, but it depends upon them for news. We don't automatically hear about something because it appears in a newspaper, for example. Contrary to popular opinion, there is no national clearinghouse of news reports or any system which allows us to monitor local news reports, and most school decisions do not make even the local news. Any reader who has ever attended a grammar school or high school can probably relate to the idea that, for the most part, "school news" means high school athletics or budget debates—with an occasional proposed scandalous misunderstanding ("Science teacher sells pH kits at cost, pays for kits for others").

Education is an amazingly strange "industry." The problems are certainly not limited to science education. Americans—and many others—are simply not clear about how they should provide for their children and grandchildren. Some perhaps think

there is literally no future (cf., millennarians), and others appear to agree because they choose inertia. The result of this is that getting involved actually has more impact than expected—political decisions are typically influenced by popular opinion, and rabid "anti" activists are usually more active than the opposition to good programs which need support.

Get involved. NCSE will help. Don't let them get away with the argument that no one cares or that bad science is of no interest or that "everyone does it" or that individual efforts don't count or that people don't need to understand logic and science. Would you accept these arguments from YOUR kid?

NCSE membership costs less than a carton of cigarettes in most states, promotes good stuff and does not cause cancer, and contributions and memberships are usually tax-deductible. So why doesn't everyone send a lot of money?! Seriously—the cause is good, the need is tremendous, and the organization is cost-effective and crucially alone on stage.

Renew your membership—and ask a friend or colleague to join. Thank you.

John Cole

The long-awaited C/E Index issue has been slightly delayed but will be mailed soon; it's in press at last!

Update on Honig, Successor

Eugenie C. Scott

California Superintendent of Public Instruction Bill Honig, convicted of felony conflict of interest (see *Reports*, 12(4):1), was sentenced February 24, 1993, to four year's probation, 1,000 hours of community service, and fined \$10,800. He was also ordered to repay the value of contracts given to his wife's nonprofit organization, a total of \$330,509. His lawyers had argued for the charges to be reduced to misdemeanors, based on Honig's public service and lack of any prior record. Upon conviction he was removed from office and forbidden ever again to hold public office. Prosecutors demanded that he serve some prison time and that he be forbidden to have any contact with children during his time of probation, parole and community service. The trial judge rejected these conditions but also rejected Honig's effort to reduce his conviction to a misdemeanor status which might allow him to seek public office in the future.

Honig was supported by an extraordinary list of character witnesses, from Ernest Gallo to George Lucas to California Education organizations to unions to Reagan/Bush education administrators. The judge was not swayed and ordered maximal punishment short of incarceration.

No one has been convicted of similar California charges in decades, and no one has been convicted at the felony level; Honig has filed for appeal.

Meanwhile, politics marches on as Republican Governor Pete Wilson squares off against Democrat Speaker of the Assembly Willie Brown over the appointment of Honig's replacement. The governor appoints, but either the Assembly or the Senate may veto the appointment if it does so within 90 days. Wilson has appointed conservative state senator Marian Bergeson, a Republican from southern California, who underwent 5 hours of testimony and questioning from the Assembly on April 1, 1992.

Whoever fills out Honig's term will be well positioned to run for Superintendent in 1994, and both Republicans and Democrats want someone of their persuasion in the post. Democrat Brown has been quite blunt about not supporting any Republican for the post, even though the Superintendent's position is supposedly nonpartisan. (Honig is a Democrat.)

Bergeson is opposed by the California Federation of Teachers. She supports letting individual districts decide whether to use the Channel One television news program, which was opposed by Honig because of the commercial messages broadcast along with educational ones. She has sided with Governor Wilson on budget cuts for education, and introduced a bill in the Senate that would allow low-income students to be given vouchers usable at private, nonparochial schools.

Because the creation/evolution controversy has been such a contentious issue in California, the *San Francisco Chronicle* ques-

tioned the candidate during an extensive interview. "I don't believe creationism should be taught in the schools," said Bergeson, who is a Mormon. "But I think evolution is a theory and should be taught as a theory. I think religion belongs in the home and the church, and I say this as a religious person" (Asimov, *S.F. Chronicle*, 3/18/93, p. A19). During her questioning in the Assembly, she stated "I'm not sure that I even know what creationism is" (Gunnison, *S.F. Chronicle*, 4/2/93, p. A21). She believes the Earth is 300,000 years old, however, which has caused some educators to question the adequacy of her science background.

The Assembly will vote to accept or reject her on April 19. The Senate is considered to favor her appointment.

The GOP-controlled State Board of Education has also stripped the Superintendent's office of many of its powers to set education policy or control its own budget, so Honig's successor will apparently be weakened, whatever his or her personal educational or political agenda.

Meanwhile Honig has received wide popular support and sympathy from educators to business leaders. NCSE has been informed that contributions to fund Bill Honig's appeal may be sent to Friends of Bill Honig, 2443 Fillmore, Ste. 113, San Francisco, CA, 94115; 415-921-8637. Checks should be made out to "Friends of Bill Honig."❖

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Successor
says
creationism
should not
be taught in
public
schools—but
says
evolution
should be
taught as "a
theory"
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Noah's Ark on CBS

John Cole

As reported earlier (12(4)), On 20 February CBS Television network broadcast a very biased pseudodocumentary, *The Incredible Discovery of Noah's Ark*. Billed as a coproduction of Sun International and CBS, the show follows an earlier June 1992 broadcast on science in the Bible produced by the same team. Each time, a number of people contacted NCSE to say "DO SOMETHING about this show!" We have, in fact, contacted CBS, but we have been uncharacteristically ignored, so far—rather flamboyantly ignored, in fact, suggesting perhaps that we have raised issues CBS wants to evade.

I know that newspapers in Massachusetts and Illinois have published letters critical of the broadcast, and a West Virginia newspaper published a "challenge" from philosopher Paul Kurtz demanding that CBS submit claims to testing by independent archaeologists. These protests are probably the tip of a somewhat larger iceberg.

Writing in *Acts and Facts* (22(4):2-3), John Morris gives the program good reviews for interviewing him and other Institute for Creation Research staffers, and he praises the producers' conclusion that the biblical story of the Flood and Ark is true. However, Morris notes that the Ark has not actually been found conclusively, contrary to the show's implications. He also reports that old-Earth creationist Dr. Hugh Ross was "infuriated" by the broadcast and editorialized against it in his newsletter. Ross, he says, criticizes the evidence as "bogus" or "blatantly deceptive," and uses the occasion to deride Flood Geology.

So far, CBS is clearly stonewalling. Ongoing, persistent letters and calls will predictably elicit response, however begrudging, and NCSE would like to receive copies of any letters you send or responses you receive. We would

like to influence their decision-making for the better rather than elicit an apology; in writing CBS, bear in mind that goal, however annoyed you may be with their actions or reactions. In the long run, this broadcast needs to be seen in the context of nearly overwhelming creationist pressure on the media with which we have to deal, so responses are important but may be most effective if they are very reasonable, very succinct, and positive (e.g., suggestions about how to avoid such future embarrassments).

To my knowledge, at this writing CBS has replied to only two of the protest letter writers I know of (Thomas Jukes', Kevin Padian's). Ranse Traxler wrote and called them, as did I, NCSE president Jack Friedman, treasurer Mac West, Robert Dietz, Frank Steiger, Daniel Phelps, Jonathan Goodwin, Neal Matson, Mike Hochstein and several others. The reply to Jukes misquoted his letter and generally dismissed his complaint, simply noting that the credentials of the "scholars" interviewed were presented—implying that there was sound basis for the claims made by the various creationists featured on the show. However, with one or two exceptions, the "experts" were either leading creationists such as John Morris and Walter Brown or were iden-

tified simply as "professor" without affiliation or were affiliated with obscure Bible colleges.

A CBS spokesperson told Jukes that only 25 callers had complained, while over 400 had praised the show. Very few people call TV networks unless there is an organized campaign, so this tally is pretty meaningless. However, next time we *should* be organized, if this series continues. Keep your eyes on your program listings—more such shows are reportedly planned. CBS can be reached at (212) 975-3166; 51 West 52nd Street, NY, NY 10019.

I personally wrote to the CBS Programming Director with copies to CBS President Laurence Tisch and the CBS News Division President (the show was not produced by CBS News, but I argued that it reflected upon them as a supposed documentary); I wrote to the show's producer and to my local CBS affiliate. I sent copies of correspondence to the FCC, and wrote to my local newspaper. The FCC replied via a form letter that they had no jurisdiction in this matter. However, the FCC has traditionally collected letters about stations' broadcasts as part of the evidence studied when licences come up for renewal.

CBS, cont'd on p. 6

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CBS is
clearly
stonewalling
❖

Darwin's Detractors

Darwin's theory of evolution has never sat comfortably in the minds of those who pretend that science is a myth engendered by the malevolent to disturb the innocent among us. So it is natural, and inevitable, that there should be a steady stream of publications intended to demonstrate to those who already believe evolution to be false that their prejudices are correct. The latest version of the attack on Darwin, *The Facts of Life* (Fourth Estate, London) is written by one Richard Milton, who is not a creationist. Like others in the field, the book, as the saying goes, seems to be "well researched"; it quotes the experiments of Cairns, *et al.* (*Nature* 335, 142-145, 1988) as proof of directed rather than undirected evolution, for example.

The appearance of books like this is not remarkable; publishers are free to publish what they choose. But Milton's book has this week been given advance publicity in the British newspaper *The Sunday Times* under the headline "Scientist threatens to make Darwin extinct." (Milton is described in the text that follows as a "science writer, engineer and amateur geologist;" this is his first book.) The text of the article, taking more than a third of a page, summarizes the "evidence" that the Earth is much younger than commonly supposed. In the tradition of balanced journalism, it also includes supportive comment from a retired bishop and expressions of mild dissent from two geneticists.

Why serious newspapers do this kind of thing is beyond belief. To be sure, these are the dog days in Britain, when domestic politics is in limbo and newspapers are preoccupied with the doings of the royal family. No doubt the newspaper, if asked, would explain that it is merely its public duty to bring to the attention of its readers controversies that, if resolved, would change the intellectual temper of society. But followed uncritically, as in this case, that is simply a licence to revive spurious and outdated arguments and to dress them up as alive whenever the flow of regular news is slack. That is not a service but a disservice to serious readers.

(Reprinted, with permission, from *Nature* 358:698, 27 August 1992.)

Orland, California

A local Orland, CA school started a mural project, "Life Through Time." Before 3 feet of it was painted, anti-evolutionists intervened. A rainstorm halted work on the project, and a parent said that it was "God's tears" preventing continuation of the project.

A school site meeting with parents and members of the community was scheduled to discuss the mural project, and it is prominent on the school board agenda for April 1993.



Vista *cont'd from p. 1*

other activists in the community and the Superintendent, had received copious information from NCSE on both scientific and legal aspects of creationism. By my estimation, the large audience was about 2/3 anti-evolutionists—which means there was a resounding turnout for our side! Ordinarily we are outnumbered far more than this. The CCN did an excellent job of turning people out for the meeting.

I was one of the few individuals lucky enough to address the board. Because of advance publicity on the board's position regarding "scientific" creationism, I used my brief time allotment to offer NCSE's help in coping with what I predicted would be future developments in this issue. I warned them about euphemisms for creation "science" that are in vogue elsewhere, and which would likely arise in Vista as well. I warned them that they should not be misled: that "intelligent design," "abrupt appearance theory," and "alternate scientific views to evolution" were all code words for "science."
Vista, cont'd on p. 18

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Why
serious
newspapers
do this
kind of
thing is
beyond
belief
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John Tyndale's Views on Evolution and "Intelligent Design Theory" transcript of public testimony

Coming to the issue here, all along the campaign that I was in, it was demanded of me to confess my religious beliefs so that I wouldn't be accused of hiding my beliefs and then getting on the board. I did freely confess my beliefs in Jesus Christ as my Lord and Savior, and I have no reservations saying that publicly, here, nationally. (applause)

❖

Intelligent design theory will challenge the evidence of a random mutation theory

❖

I was asked my beliefs of creationism in the science classroom. I said all along that it wasn't a major concern of mine. That I was really concerned about scientific method in the science classroom. I've been a science teacher. When I taught science, I used to teach it from an experimental mode. It was all purely observation and inference. You had the hypothesis but the important thing was the observations and the inferences—that was scientific method. That was what was critical for students to learn those critical thinking skills. I still believe that. That is essential that we teach the critical thinking skills to our students.

Now, with the creation issue, I have always found that the word "creationism" invokes a theological response in most people. That in itself is self defeating in a science classroom. You can't have theology in a science classroom, and I've said that all along. I don't want theology in a science classroom. What I want in a science classroom is a critical observation of evidence from which students can draw their own inferences and conclusions. As it is

right now we have . . . the scientific establishment says that we are to accept as fact (they even go so far as to say observable fact) that the origin of species is a random mutation. A progression of random mutation of chance totally precludes any sort of an intelligent design theory. It's a random mutation theory that has a monopoly on science in our nation right now. I have a concern that this does not allow a scientific challenge to enhance these critical thinking skills.

In order to have a scientific challenge, you have to be able to have a challenger there. Intelligent design theory certainly would challenge the evidence . . . the scientific evidence—not theologically—intelligent design theory will challenge the evidence of a random mutation theory to explain the evidence.

I don't care whether you believe in evolution or . . . or . . . creationism or whatever. What's important is that you draw your inferences from the data, the observable data that is there, and that we don't dogmatically accept that which seemingly the scientific establishment wants us to believe because that is their position. The scientific community is greater than the scientific establishment and I think if we are not allowed to have scientific challenges to the scientific theories that are out there, we're going to lose our critical thinking skills.

I would ask our ACLU friends who are here tonight (audience

laughter) a question for them—and I am serious about this—I would ask them to help us, that I'd like to have them answer the question that are science teachers allowed to present evidence that presents a scientific challenge to the random mutation theory of macroevolution, even to the point of intelligent design theory being that scientific challenge. Thank you. (great applause) ❖

CBS *cont'd from p. 4*

A television network broadcast such as this has local effects which can be addressed locally. Complaints to a local broadcaster are, indeed, noticed, and they are supposed to go into a sort of "album" of comments reviewed when broadcast licenses come up for renewal. Local newspapers often enjoy brief letters critical of television, and a letter to the editor can note NCSE's address for an alternative viewpoint. Even if not published, such letters are filed and may have some future value. If creationists raise the argument "it was on TV," both you and reporters will be prepared with some track record which says 'tain't necessarily true just because it was broadcast.

Information about any uses of this broadcast in schools or references to it in antievolutionist debates are urgently needed—this is the kind of national nonevent which gets used at the grassroots level. NCSE can provide counterarguments and critiques . . . if it finds out about the need for replies! ❖

News

More on Galileo

Edward B. Davis

I have subscribed for many years, mostly to keep informed about issues in which I have a serious academic interest. Often I have been tempted to reply, either to foolish arguments from anti-evolutionists which appear in letters you print, or else to what can only be seen as an openly anti-religious bias on the part of certain formal contributors, including yourself. Many times I have been more angry than I am now, but have not bothered to take the time to write; for reasons not even clear to myself, I am writing now.

Your comments about the Galileo affair (*Reports* 12(4):9) are simply out of line, in that they are profoundly unhistorical. (I'll pass quickly over your error about Galileo's book which remained on the Index of Prohibited Books until 1832, as it is not my main point. Nor will I dwell on your statement that the Church based its response on *Genesis*; they used several scriptures, but none that I know of from *Genesis*.)

What is disturbing is your lack of understanding of the complexity of the Galileo affair, and your evident desire to use this misunderstanding for your own ideological purposes. You imply that the Church was *wrong* to question Galileo's evidence, which was in fact very far from conclusive: a primary effect of his telescopic discoveries was that many fine astronomers of his day began to believe in the modified geostatic cosmology that had re-

cently been proposed by Tycho Brahe. That model could not only explain *everything* Galileo saw, it could also explain why Galileo was *not* able to see stellar parallax. There simply was no direct evidence that the Earth moves before the 18th century when the aberration of starlight was found. By then, of course, it was a moot point, but it was decidedly not a moot point a century earlier. What Galileo believed was his strongest argument, that the tides prove the double motion of the Earth, was correctly viewed by his opponents as both logically fallacious and actually in contradiction to known facts about the tides. I cannot answer for you, but if I had been alive in the 1630s, almost certainly I would also have seen Galileo as just an arrogant man pushing evidence well beyond where it properly went.

Whether the Church was also correct to try to control the intellectual climate by censoring Galileo is of course another matter. But even here, they were doing nothing that other large bureaucracies were not also doing routinely at that time. Obviously one could ask, with good reason, whether the Church *ought* to have imitated secular states, but failure to recognize the complexities here is precisely akin to many creationists' failure to recognize complexities in evolutionary theory.

I know you are not an historian. But your position, rightly taken, is that people who don't understand science ought not pronounce about it from ignorance. I ask only that you hold yourself to a similar standard with regard to

the history of science. What this means is that, if you insist on using the history of science to promote an aggressively secular agenda, at least you should do so with some measure of historical understanding: and this would be hard to do, since one of the signs of historical understanding is the willingness *not* to allow one's own ideology to distort the actual situation.

Ed: I reported the wrong date for the lifting of the book ban because I failed to check out the date I quoted from a press report. However, my real concern is one raised near the end of this commentary—Why should there be an Index of Prohibited Books? I am not an historian, although as an undergraduate history major long ago I remember studying the Galileo "case" in some detail in both history and "civ" classes as a sort of late gasp of theocratic control of emerging secularism (not just science), not as a case of good or bad scientific reasoning or data, as such. The Inquisition was perhaps more concerned with his materialist "atomic" theories than his astronomy. I can "understand" the Inquisition as a political-economic struggle, for example, but that does not make me conclude that the Inquisitors were justified or excusable. The issues are indeed more complex than whether or not Galileo was "right," and my brief report was meant to convey that.

Dr. Davis is Associate Professor of Science and History, Department of Mathematical Sciences, Messiah College, Grantham, PA

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Did NCSE
misrepresent
the 17th C
"condemnation"
of Galileo and
his recent
semi-pardon?

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Australian Geologists Speak Out for Evolution

Policy statement of the Geological Society of Australia, Inc. re: Science Education and Creationism, from *The Australian Geologist*, Newsletter No. 84, 30 September 1992.

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Notions
such as
"flood
geology"
are not
science
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The Geological Society of Australia observes a basic policy of non-discrimination and affirms the right of scientists to adhere to or associate with scientific activity without restrictions based on nationality, race, colour, age, religion, political philosophy, ethnic origin, citizenship, language or sex. The Society endorses the universality of science within the natural world.

Scientists, like many others, are touched with awe at the order and

complexity of nature. Science seeks to explain natural phenomena using natural laws, verifiable and reproducible observations with logical analysis; it reaches explanations which are always subject to amendment with new evidence.

The Geological Society of Australia considers that notions such as Fundamental Creationism, including so called "Flood Geology," which disregard scientific evidence such as that based on repeatable observations in the natural world and the geological record, are not science and cannot be taught as science.

An essential element in the teaching of science is the encouragement

of students and teachers to critically appraise the evidence for notions being taught as science. The Society states unequivocally that the dogmatic teaching of notions such as Creationism within a science curriculum stifles the development of critical thinking patterns in the developing mind and seriously compromises the best interests of objective public education. This could eventually hamper the advancement of science and technology as students take their places as leaders of future generations.

In some parts of Australia the advocacy of notions like Creationism are confronting the integrity and effectiveness of our national education system and the hard-won evidence-based foundations of science. The Geological Society of Australia cannot remain silent. To do so would be a dereliction of our responsibility to intellectual freedom and to the fundamental principles of scientific thought.

As a consequence, the Society dissociates itself from Creationist statements made by any member.

This Policy Statement sets out the views of a learned Society dedicated to scientific investigation in Earth science, including research, resources exploration, and education. It is made with the agreement of the Society's Executive Committee and the below-listed Past Presidents of the Society which are taken collectively to reasonably represent the sustaining wisdom of the Society in this matter. [JRC] ❖

Lord Zuckerman Dies at 88

Solly Zuckerman is probably known to most NCSE members because creationists have endlessly repeated his statement that Australopithecines were not directly ancestral to modern Homo. Far from being an anti-evolutionist, however, Lord Zuckerman was a respected early scholar of primate behavior and evolution, although no expert on African hominid fossils.

Zuckerman's amazing career spanned many fields. After publishing *The Social Life of Monkeys and Apes* in 1931 and *Functional Affinities of Man, Monkeys and Apes* (1933), his research on hormones helped found the budding field of endocrinology. Some of his work led to the invention of the birth control pill and other aspects of fertility control. During World War II, as Winston Churchill's science advisor, he helped develop radar and convinced the British to switch from saturation bombing of cities to bombing strategic targets. In 1960 he was co-leader of the movement which led to the nuclear test ban treaty. He led British oil spill clean-up work, and took charge of the London Zoological Society, reforming its administration and financing.

Born in Capetown in 1904, Zuckerman graduated from the University of Capetown and then earned a Ph.D. at University College London. He spent much of his academic career at Oxford University. Zuckerman epitomized the "scientist as citizen" model, devoting a lifetime to a combination of research and public policy service. He died of a heart attack a month short of his 89th birthday.

News

Religion and Science in South Africa

(Name withheld)

I note your point about how Islam held the flame of science in times past. For me, though, this makes it all the more sad to see the highly intelligent and highly educated students of the Islamic Society at our local medical school holding seminars for fellow students at which "scientists" rebut evolution theory. But unquestionably, as you say, it is important to note that Islam is not inherently anti-scientific. I'm sure as with other faiths, those who are more secure with their beliefs can weave them comfortably around current scientific understanding of natural reality.

This brings me to respond to your request for comment on *Voices of Evolution*. I think the most valuable part of *Voices* is the section of religious statements. This is really valuable because it gives religious people who are also thinking people, an escape from the stark choice which the extremists which to force on them. As you say, it's not essentially a debate that is normally conducted logically anyway, since only those who are feeling emotional or undermined by the issues see there to be anything to debate. Therefore a letter from a leading priest who can show his followers how to be comfortable with their faiths without having to close their minds to the wonder of the world, is probably more powerful than the actual listing of scientific and educational bodies who support "our side" of a war that we didn't define or seek to begin with. (I am thinking especially here of the letter from the Rt. Rev. Bennett J. Sims.)

If this section were to include the voices of leading open thinkers from other major faiths (especially the Buddhist, Hindu and Islamic faiths) it would also have the effect of broadening the power of the document outside of the "Western" world.

Another point here is that in countries such as yours where a lot of information is accessible to a lot of people, most people have an idea of what the issue is about. But that is not so in many countries, especially countries where governments owe allegiance to religious figures holding creationist beliefs. Here, for example, those who have heard of evolution think it is simply a suggestion that "man came from an ape." (Thus even someone with very unsophisticated arguments can dispense with the theory). What I think would be most valuable would be a summary of current understanding; mentioning, but not only focusing on man. Even more crucial would be a survey of the indicators that this theory is on the right tracks. This would mention genetics, embryo development, relevant microbiology, etc. and show that the search for skulls is only a fraction of the picture.

Distribution, if you can afford it, would be valuable. I would say that the most effective point of entry would be through science teachers, professional bodies with an offer to send sufficient copies for members, and agencies concerned with curriculum development.

The author belongs to a science education organization in South Africa. ❖

"Former
communists
have more
freedom than
our kids"

—Rutherford Inst. ad, 1992

ICR Graduates Masters Degree Holders

Eugenie C. Scott

The October 1992 *Acts and Facts*, published by the Institute for Creation Research, announces with pride that eleven M.S. degrees were awarded during the summer commencement ceremonies at the school. Readers of *Reports* will recall the furor surrounding California state permission to grant graduate degrees in science (*Reports* 9(1):21; 10(1):1; 10(1):14; 10(2):15; 10(4):8, 10(5):6; 10(6):6; } which resulted in the ICR being approved as a legal grantor of degrees, and the state settlement of an ICR-brought lawsuit much in favor of the creationist school's position (*Reports* 11(4):1).

Though approved (licensed) by California to grant degrees, ICR remains unaccredited except by a Christian school accrediting body. All eleven graduates are employed either by the ICR or by Christian schools or colleges around the country. The fact that ICR is unaccredited doubtless influences the employability of its graduates in secular institutions. ❖

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"The most
valuable
part of
Voices is
the section
of religious
statements"
❖

US Companies Cut Science Research

84% of American companies report that they plan to keep their current research efforts at the current level or cut them back, according to the *New York Times* (11/11/92). American industry is "pulling back" on commitments to research for 1993 and at least the near future, according to a survey conducted by Washington's Industrial Research Institute, a trade group. This was a more pessimistic response than found in a similar survey last year.

28% of companies expect to cut research and development spending, while 24% plan to increase it. The percentage of budgets devoted to "directed basic research" is expected to decrease at 31% of companies and to increase at only 11%. Research budgets are expected to shrink from 3.4% to 3.3% of company budgets over the next year.

❖
28% of companies expect to cut research and development spending, while 24% plan to increase it
❖

Local Access Cable TV Needs YOU!

Catherine Fahringer

Last summer *Reports* mentioned creationist inroads on local access cable TV channels and asked for reports on it. A week's worth of San Antonio, Texas TV listings indicates that the problem is widespread, and that creationist-oriented religious programming is a common staple of the cable revolution.

I am seventy years old. I started doing a local access show in the summer of 1988 because I was alarmed (and irritated) at the proliferation of religious junk on the access channel here. It has not been easy keeping my program going, and one obstacle after another have been put in my path. The cable company does not mind in the least cablecasting religious programming because it

is not a drain on their studio time, interns, or other personnel. But Paragon Cable would dearly love to abolish programs such as mine which are *not* canned by outside organizations. I am determined to keep going, but I don't know how much longer I can hold on.

I wish more people would take advantage of access cable. My "Freethought Forum" addresses many social issues beyond creationism such as corporal punishment, for example. Religious groups and special interest groups with their own production facilities seem to be using it more and more, and this lets cable companies live up to their licenses requiring independent access programming. But press them—they have the facilities and expert help for you to use to produce a regular or special program for your community, and people do watch! ❖

Creationist Stamp Series

Palau, a U.S.-administered Trust in the South Pacific, has issued a series of stamps in blocks of four 29-cent first class stamps which depict the six days of creation in *Genesis*. Each block of four stamps depicts one of the six days with art work and the text of the Biblical description of each "day."

The U.S. administers affairs for Palau, but the islands also have a degree of independence from the U.S. as a Trust-administered Republic, despite using American postage and currency units. Palau has its own constitution, not the American one. ❖

MIT Ig Nobel Prize to Yuri Struchkov

Some academics worry about the fact that they are expected to "publish or perish" at major colleges and institutes. At least one Russian scientist must be sleeping easily in this rat race.

Yuri Struchkov was recently cited by the satirical Ig Nobel awards committee for his intellectual productivity. Specifically, for his publication between 1981 and 1990 of 948 scientific papers, or one every 3.9 days. Struchkov is with the Moscow Institute of Organoelemental Compounds. (Noted in *Science* 16/10/92) ❖



NCSE News

Planned Giving: Is NCSE in Your Will?

Have you considered naming NCSE as a beneficiary in your will or insurance policy? NCSE would appreciate such continued support and use it carefully.

To name NCSE an insurance beneficiary you should simply register that information with your insurance provider(s), following their instructions. They will require the address and name—The National Center for Science Education, Inc., P.O. Box 9477, Berkeley, CA 94709. Some insurance policies may have additional specific details and rules to follow.

To donate money, securities, or other property to NCSE via your will, consult your attorney. Legal requirements may vary in different localities, and there may be different rules governing different classes of property bequeathed. NCSE is classified a "501(c)(3)" not-for-profit organization by the US Internal Revenue Service, which might offer tax relief benefits to your estate. Upon request, NCSE can provide a copy of this IRS tax-

status ruling for use by your attorney or financial advisor.

There are many more complicated forms of "planned giving" you might wish to explore with your attorney and tax or financial advisor; NCSE is looking into such areas as annuities, for example. NCSE does not yet have pre-packaged plans in place, but as a nonprofit organization it should be considered as a potential beneficiary of such more complex plans to reduce your tax burden or the potential burden on your estate.

If you name NCSE a beneficiary of any insurance, will or other deferred giving, please be sure to let us know (and of course make sure this is made clear in your insurance, will, or other legal documents).

Any gift or bequest will be greatly appreciated, and it will allow your gift to continue advancing your educational and scientific interests. ♦

Friedman Elected President

At the Board meeting in February, Jack Friedman was elected NCSE President, succeeding Bob Schadewald. Friedman is a former president, long-time board member, and co-founder of NCSE and the Committees of Correspondence.

Robert "Mac" West, a Washington-based museum and science consultant, was confirmed as Treasurer, replacing Friedman in

that position. A new member was elected to the Board—Nancy Cohen, a nonprofit development consultant from New York City. Eugenie Scott was reappointed Executive Director, and John Cole was reappointed editor.

The major order of business at the meeting was how to meet the financial crunch facing NCSE—a problem faced by other nonprofit organizations, as well. New fundraising efforts are needed. ♦

Libraries Need Voices for Evolution

NCSE's *Voices for Evolution*, edited by Betty McCollister, compiles statements endorsing evolution education from religious organizations, teacher organizations, and scientific societies.

Voices should be in every library, school, and even every church in the country. Every publisher and science editor should have a copy, too.

Voices now sells for \$10 (\$8 for members, plus shipping). But NCSE will send a copy to any US library (public library, school, college, or church library) in your name for \$5 per copy, **including** shipping.

The book has uses in other countries, as well. NCSE will send copies to non-US library(s) you specify, in your name, for \$7 per copy (\$6 U.S. to Canadian libraries). Include complete addresses. The price differential is the fault of high foreign postage rates.

Send the address(es) to receive your gift books and enclose your check in US dollars to NCSE, PO Box 9477, Berkeley, CA 94709-0477. (California residents please add 8.25% tax.)

OR—Help NCSE distribute the book by ordering a lot of copies and then placing them in libraries yourself—or mailing them. Order 5 or more for \$4 each, or 50 for \$160, shipping to one address included.

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Bumpersticker #2

Tracking Those

Ten Tips for Successful Letter Hacking

Mary Lou Mendum

While most of the battle against creationism has necessarily focused on the political and legal battles over textbooks and curriculum development, it is important to remember that public opinion plays a major role in determining the material actually taught in biology classrooms. One inexpensive and effective way to educate the public on the nature of science in general, and evolution in particular, is through the editorial pages. Letters to the editor are widely read, and fundamentalists have long been using letter campaigns to push their agenda.

A well-written and well-researched rebuttal can stop such a campaign. When the *Vacaville Reporter* suddenly started printing letters attacking Margaret Sanger, the founder of Planned Parenthood, I noticed a suspicious monotony to the quotes from her writings. I located the quoted book and wrote a letter describing the context of the misquotes. Since the Vacaville library didn't have the book, and I had checked out the only copy in the University of California library system, I accused Vacaville's Sanger critics of dishonestly quoting from a book they probably had never seen, much less read. No further letters on the subject of Margaret Sanger have been published in the *Reporter*.

While fundamentalists are unlikely to be as easily silenced on a subject so central to their beliefs as *Genesis*, by promptly detailing the scientific errors in

creationist letters, NCSE members have the opportunity to expose creationism as the pseudoscience that it is.

Here are ten guidelines to consider when writing rebuttals to creationist letters:

1. *Criticize facts, not opinions.* Honest statements of belief in creationism as an article of faith are not open to argument, and they serve the useful purpose of revealing its religious basis. Instead, concentrate on exposing misquotes and factual errors. Name calling is not advisable, but accusations of sloppy scholarship and ignorance, in combination with suitable documentation, can be devastating.
2. *Do your homework.* If you are criticizing creationists for poor scholarship, you can't afford to make the same mistake yourself. On the other hand, if you can back up your statements with references to the scientific literature, or document misquotation, you can greatly increase the impact of your letter.
3. *Don't cover more than one or two points in each letter.* Your goal should be to destroy the credibility of the local creationists, not to give an introductory biology seminar. A lengthy point by point discussion of transitional fossils is less effective than a short letter detailing one misquote and one major scientific error. If you try to cover too many topics, the editor is likely to delete half of them.
4. *Keep it short and succinct.* The more concise your letter is, the less chance there is that the editor will either reject it entirely, or edit it beyond recognition. Make sure that every word is essential to the overall point of your letter. This is particularly important if you are writing to conservative papers, as they have a tendency to delete all those annoying little facts that make evolution sound more scientific than creationism. Letters of one page are much more likely to be published than those of two or more pages. If you use a computer, and your letter is still a little too long after editing, try expanding the margins and changing the font. That won't change the word count, but your letter will *look* shorter, and that might be enough to keep it from being rejected out of hand.
5. *Humor is helpful.* A funny, entertaining letter is much more memorable to both editor and readers than an angry or sarcastic one. Creationism is a laughable attempt to cloak religion in the garb of science—so don't be afraid to laugh at it.
6. *Slant your letter towards the newspaper's style.* Don't attack the creationists' right to advocate their beliefs when you write to a liberal paper—you might even want to include a statement that you support their freedoms of speech and religion, when they are exercised outside of the science classroom. Ap-

❖
Editors and
reporters
are much
like normal
humans. . .

❖

Incredible Creationists

peals to scientific authority are very effective in letters to conservative papers, while liberal papers prefer more specific references.

7. *If you have credentials, mention them.* Few creationists writing letters to local newspapers have any scientific training. If you have earned a degree or done research in a relevant scientific field, you are automatically more credible than a person who has not. If you are affiliated with a university, use your departmental address. Most newspapers will print such information under your name, and that is far more impressive to readers than the usual hometown fluff.

8. *Two letter hacks are more effective than one.* Letters editors like to keep lively debates going, but they will seldom print two letters from any one person during an exchange, and if two people submit good letters on the same topic at the same time, chances are that only one of them will be published. If you coordinate your efforts with one or more other people, you can be sure that any creationist attacks on your letters will be responded to promptly and effectively.

9. *Don't limit your writing to creationism.* The New Right agenda goes far beyond creationism, and an effective defense of science requires that the constitutional basis for rejecting the teaching of creationism remains intact. Letters advocating strict church-state separation on is-

such as tuition tax credits and school prayer are just as important as letters which debunk creationist pseudoscience. Remember, the same First Amendment is used by our scientifically illiterate judiciary to decide all three issues. Likewise, if you can document scientific inaccuracies in a fundamentalists' anti-abortion letter, he or she will be less likely to use the same tactics to attack evolution.

10. *Be persistent.* It may take five or six tries before a newspaper publishes one of your letters, especially if it

has a large circulation. Don't be discouraged; eventually the letters editor will tire of printing yet more letters on the latest election scandals, and start looking for a little variety.

It is very unlikely that even the best letter-writing campaign will convince hard-core fundamentalists to abandon creationism. However, by writing in to correct their factual errors and dishonest scholarship, it is possible to discourage them from using the letters pages to promote bad science, and you influence the "undecided" vote. ♦

Science League of America

Evolution, "A Journal of Nature, Published Monthly by Evolution Publishing Corporation," reports in issue Number 1, December, 1927, on a forerunner of the NCSE. (*Evolution* was itself a forerunner; each issue was devoted to countering creationist arguments and promoting public evolution education.)

The Science League of America was founded in 1924 and incorporated in 1925 "to combat the efforts of Fundamentalists to abolish the teaching of modern evolutionary science in tax-supported schools and colleges in this country. It has branches in several cities and members in 47 states, the District of Columbia, Canada, Mexico, Hawaii, Alaska, the Philippines, Cuba

Puerto Rico, Brazil, England, and France." The League worked with editors and publishers, sponsored public forums, publicized and protested cases of teachers fired for teaching evolution, presented evidence to school boards, and arranged for scholars to speak to legislative bodies considering bills to ban evolution education.

Are any of our members former members of the League? Does anyone recall subscribing to *Evolution*? A friend has loaned me 10 issues, December 1927 through November 1928, and they're fascinating reading. They are also addressing dreadfully familiar arguments from creationists which were revived in the

♦
Are you a
"Science
League"
veteran?
Former
Evolution
subscriber?
♦

Resources

Listing items here or offering to distribute them does not imply NCSE endorsement or agreement; annotations are by the editor or various contributors. "SASE" = "Self-Addressed Stamped Envelope"

Andrews, Peter. 1992. Evolution and the Environment in the Hominoida. *Nature* 360: 641-646 (17 December).

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Henig, Robin Marantz. 1993. *A Dancing Matrix: Voyages Along the Viral Frontier*. NY: Knopf. 269 pp, \$23. Emergent diseases resulting from tropical forest habitat destruction and international travel.

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McFadden, B.J. 1992. *Fossil Horses: Systematics, Paleobiology, and Evolution of the Family Equidae*. NY: Cambridge University Press. xii+369 pp, NP. Everything

The Neandertals: Changing the Image of Mankind. 1992. Trinkhaus, Erik, and Patricia Shipman. NY: Alfred A. Knopf. xxii+455 pp, NP.

*Reviewed by Frank Sonleitner
Zoology, University of Oklahoma*

Trinkhaus is one of the world's leading authorities on Neandertals, having written more than a hundred scientific articles on their anatomy and evolution. Shipman is a prominent Johns Hopkins scholar of human evolution. Their book is a popular history of the science of paleoanthropology that begins with the earliest find of fossil humans, the Neandertals unearthed in the 19th Century in Europe. It concentrates not on the minutiae of the physical morphology of specimens but on the circumstances of their discovery, the lives of the people that discovered them and the various ideas proposed to explain them.

The book is fascinating—a Who's Who of the paleoanthropology world. It recounts all the personalities and controversies of the field, allowing the reader to understand the changing views about Neandertals—first thought to be pathological specimens afflicted with rickets; then ape-like offshoots of the human tree; finally a distinct group of humans, some of whom may have been our oncestors. The authors also discuss a number of early non-Neandertal discoveries, including *Pithecanthropus* in China and Java, *Australopithecus*, and the Piltdown hoax.

Resources

you want to know about horse evolution; technical.

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ral origin of Universe. As Aquinas said, (God) "wants to train Christian people, not mathematicians."

Reggia, James A., Steven L. Armentrout, Hui-Hsien Chou, and Yun Pen. 1993. Simple Systems That Exhibit Self-Directed Replication. *Science* 259:1282-1287, 26 Feb. Self-replication may be a fairly simple process, contrary to intuitive arguments. Technical, important.

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Strahler, Arthur N. 1992. *Understanding Science*. 409 pp. Buffalo: Prometheus. \$20.75 from NCSE—see Centerfold. Erroneously described as "available in

September" in last two issues—true enough, but that's September 1992!

Swinburne, N. 1993. It Came from Outer Space. *New Scientist* 137(1861): 28-32, 20 Feb. Reviews case for extraterrestrial cause of dino-demise.

Tunnicliffe, V. 1992. Hydrothermal-Vent Communities of the Deep Sea. *American Scientist* 80(4): 336-349.



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Keeping Tabs

B.P.*, or, Why "One Million, B.C." Was not an Entirely Scientifically Accurate Movie

John Cole

History started when it was written down, and "pre-history" refers to the time before written history. Which sounds simple until you realize that some small areas have histories going back thousands of years, while others have no written records even today, making "prehistoric" a relative term. Worse, the standard calendar has built into it some extremely sensitive political and religious issues, so many non-Christians such as Jews and Muslims, as well as the rest of the world, use the euphemistic term "Common Era" (as in "B.C.E." for "Before Common Era") to refer to dated events in the last few thousand years "B.C."

Paleontologists and most archaeologists dealing with ancient events find the idea of "B.C." and "B.C.E." largely irrelevant because the time frame is so limited. Also, it sets up a faulty "Year 0" which is logically impossible, so we "base-10" folks have the odd problem of confronting a supposed millinarian apocalypse in the year 2000, not the equally artificial but more consistent and accurate 2001, the real turn of the century in the Christian calendar. This is a minor calendric detail which current end-of-the-worlders might be asked to consider. (And it should be noted that modern scholars tend to date the birth of Jesus at 3 or 4 or 7 "B.C." or other dates, not at the impossible

year "1" or "0." The next Millennium begins 1 January 2001, for what it's worth in your next argument.

More important than this quibble, the last couple of thousand years are an infinitesimal percentage of the the "history" of the Earth or even the record of human life on Earth. Archaeologists therefore routinely use "B.P." to refer to the age of an artifact or site, recognizing the unbalanced nature of the "BC/AD" distinction because almost everything happened "B.C." and that in relative terms something dated 100 B.C. is virtually contemporary with the space shuttle compared with artifacts dated a million years old, even ignoring the political issue of basing things on a debatably dated birth of Jesus.

I hope that "B.P." is now clearly defined and that readers are convinced that it makes perfect sense. It's just "years ago."

Now for some small-scale quibbling with this clear-cut definition: In radiocarbon dates, "B.P." means "Before 1950!" This does not really change anything for anyone interested in time frames of thousands and millions of years. When radiocarbon dating was invented, scholars recognized the need to make different dates comparable and to base them on the "years ago" idea without reference to cultural reference points such as the birth of Jesus. The result was obvious: dates should refer to time before 1950, since 1950 was approxi-

mately "now." But something radiocarbon-dated "100 years B.P." now would mean 1850, not the apparent 1890—except that radioactive dating techniques are always stated as statistical probabilities with plus or minus ranges, not as absolutes, so a typical radiocarbon date might read "500 yrs, +/- 120, meaning that there is an equal probability of the actual date being anywhere within the plus/minus range.

This does not affect most paleontological dating which deals in much larger time scales. There is no meaningful difference between 65 million years ago and 65 million years "B.C.," so scholars do not bother to reconcile paleontology with the Christian calendar. 1950 is similarly irrelevant. Most paleontological dating goes far earlier than the limits of radiocarbon dating and uses other techniques, instead. ♦

♦
"B.P."
means
years
before

present—or
before 1980!

♦

Gifts

You might want to consider gifts to NCSE as memorials or celebrations dedicated to others. When rich Uncle Don gets married and you don't know what to give him, why not either a gift to NCSE in his name or a membership? NCSE will acknowledge and thank him for your interest! Similarly, a gift to NCSE can be a worthwhile living memorial when someone dies, and we can acknowledge such a gift to whatever person you designate, if you wish us to do so. Contributions are tax deductible to the full extent allowed by law. ♦

Resources

Z Papers Issue on Science

❖
Is science a
white male
supremacist
conspiracy?

Is science a white male supremacist conspiracy? Is everything "just storytelling?" Some people say yes, but others react that this is "politically correct" nonsense.

A special issue of the leftist *Z Papers* (October-December 1992 issue) explores the debate, publishing various writers who take the affirmative position to various degrees followed by a detailed rebuttal by the magazine editor and similar views from two of the Left's leading writers, Noam Chomsky and Barbara Ehrenreich. This volume is especially interesting because it provides a critique of anti-science prejudices by intellec-

tuals who are strongly associated with advocating women's rights, multicultural education, etc. rather than from curmudgeonly opponents who delight in taunting liberals.

This 65 page issue (Vol.1, No.4) is available for US \$5 from Z Papers, 116 St. Botolph St., Boston, MA 02115. ❖

Ascent of a New Newsletter

A new publication announcement: *Ascent*, a newsletter which advertises itself as aimed at readers interested in evolution, mythology, sociobiology and related fields. Two "preprint" articles have been received—one deals with mythology and origins of the book of *Genesis*, the other with "evolution of conscious-

ness" via New Age, Maharishi Yogi, etc. sciences. . . . The editor writes that he was approached by a group of business people who saw a need for such a publication.

For information, write: Managing Editor, *Ascent*, P.O. Box 2248, Darien, CT 06820. ❖

Vista *cont'd from p. 5*

tific" creationism. All contravene the First Amendment of the Constitution just as much as "scientific" creationism does.

After the public testimony, board members responded with their plans for the science curriculum. Each of the three religious right members denied any intention of introducing creation "science" into the curriculum, as expected. Board members reported that they feared an expensive lawsuit if they tried to include creationism in the curriculum.

But the ICR employee, Mr. Tyndale, did precisely as I had predicted, suggesting that "intelligent design theory" had a place in the curriculum! (See following transcript of his comments.) He argued, confusingly, that evolution was "a random mutation theory," which was

"dogmatically" accepted by the "scientific establishment." If we do not allow "scientific challenges to the scientific theories that are out there, we're going to lose our critical thinking skills." The "challenge," of course, was "intelligent design theory," which would "challenge the evidence of a random mutation theory to explain the evidence." Presenting creationism as a way to improve critical thinking skills is easily recognizable as a variant of the old "equal time" argument, though cleverly picking up on critical thinking as a newly-popular skills area in education.

After the meeting, things simmered down for a while, though letters to the editor continued to flow into local newspapers. In mid-March, however, I began receiving calls for information regarding the formation of a science textbook committee in

Vista, and Mr. Tyndale's request that the committee consider adopting *Of Pandas and People*, a creationist book published by the Foundation for Thought and Ethics (see *Reports* 9(6):5; 10(1):8, 16; 11(1):10). I was able to send several reviews, both published and unpublished, to citizens to pass on to the committee. According to a newspaper reporter with whom I spoke, the publisher of the book acknowledged only 12,000 copies had been sold since the book was published in 1989. We know of no district that has purchased the book in quantity for student use, though individual teachers may well be introducing material from the book on their own.

The committee will meet in April, with a decision to be given to the board in May. ❖

Keeping Tabs

Did Michael Ruse Give Away the Store?

Arthur M. Shapiro

❖
"If a scientific revolution can be talked up, there will always be volunteers to play Lenin."

❖

Phillip Johnson was on my campus in early March to moderate a debate on the existence of God, sponsored by a Christian organization. He briefly discoursed on Michael Ruse's remarks at the AAAS Meeting on February 13, 1993, noting that Ruse had conceded his (Johnson's) main point: that Darwinism is not a scientific inference but a philosophical preference. He was pleased as punch about this. Later I showed a tran-

script of Ruse's remarks to several biologist colleagues, one of whom muttered darkly over Ruse's neurological condition and concluded that "he's given away the store."

In remarks at the session he organized, "Biological Science in the Public Domain," Ruse said that there are "certain metaphysical assumptions built into doing science" and that "science is a much more idealistic, in the *a priori* sense, enterprise than one would have got from reading the logical positivists. . . . The people like Popper, Hempel and Nagel, of the 1950s and 1960s, which was when my generation entered the field and started to grow up."

But *of course*. What a pity some of that generation—it's mine, too—never *did* grow up.

You have to look long and hard to find a Popper-worshiper in a philosophy department today. On the other hand, they are still common among working scientists—notoriously so among community ecologists, one whole school of which was predicated on being as purely Popperian as possible. Popperism is also widely invoked in certain schools of systematics and biogeography. Why in those places? Because all of those fields have reputations as soft, fuzzy, and ill-defined. Popper-worship serves a psychosocial function for its adherents. It allows them to be "soft" fields while claiming to be "hard;" it elevates them above other practitioners and confers status and a

sense of self-esteem and self-justification.

Similarly, positivism and neo-positivism are in increasingly bad odor among philosophers, but still provide psychosocial comfort to great numbers of working scientists who, as scientists, by definition, can elevate themselves above the subjective, ideological, intellectually turbulent practice of the humanities. Besieged by relativist positions, be they social constructionist or deconstructionist or feminist or postmodernist or post-structuralist or . . . or . . . Traditional philosophy departments also find themselves on the defensive for claiming there are any real eternal verities or standards of judgment. Ruse admits to having been swayed by all of these "isms" (or their "ists"). The "isms" came largely out of language and literature departments and have spread through the humanities, particularly in the US (although most of gurus are European). The reason can be understood readily in sociological terms—they provide a basis beyond the raw search for "power" for a generational power struggle in academe. We biologists saw the same force at work in systematics twice in many of our lifetimes (ie, phenetics and cladistics); we saw them in the macroevolution and punctuated equilibrium movements in paleontology, and—in a more abortive form—in the attempts to transplant structuralism from the humanities and social sciences into biology. Thomas Kuhn is right about some things, one of which might be

1994 Creationism Conference

The International Conference on Creationism is held every four years, and the 1994 ICC will be in Pittsburgh on the campus of Duquesne University. The conference will be sponsored by the Creation Science Fellowship of Pittsburgh, a tax-exempt group not affiliated with the university. Speakers will include "creation scientists" from around the US, "England, and the Continent including the Russian republics," reports *Bible-Science News*.

NCSE will have further news, but for direct information about program, costs, etc. contact the Third International Conference on Creationism, Creation Science Fellowship, Inc., P.O. Box 99303, Pittsburgh, PA 15233-4303; phone 412-341-4908.

Keeping Tabs

stated, "If a scientific revolution can be talked up, there will always be volunteers to play Lenin."

Relativist positions boil down to the claim that "scholarly objectivity" or "scientific detachment" are actually epiphenomena of politics, and that whenever we hear them invoked we must ask *whose interest is being served by their invocation*. Relativist critics maintain that there is no *a priori* reason to take one claim of objectivity more seriously than another, and that ultimately all such claims are false (even if not consciously so). All scholarship and all science is theory-laden. What we recognize as a scientific question, how we frame the problem and how we attempt to "solve it," all reflect ideologically-grounded presuppositions, voiced or not, conscious or not. It is not necessarily the case that there is no objective reality out there; only that we cannot claim to access it objectively. Thus in some sense there can be a feminist physics or a Native American botany which differ from the conventional ones in that they ask their questions from different and perhaps incommensurable perspectives, which are nonetheless presumed to be equally *valid*.

All such positions face the test of infinite regress; that is, if all perspectives are valid, on what basis do critics claim their position to be superior to the one attacked? They typically justify it in terms of political relationships and/or morality. Their position serves to "empower disempowered groups," usually non-white non-males in some combination.

I don't think Ruse has embraced all of this. It is all very floppy and internally inconsistent if not self-

contradictory, and if it took Ruse this long to wake up to it all he will probably get off the bandwagon a few years late, too. But let's not throw out the proverbial baby with the bath water. If some of this stuff is both self-serving and silly, it is correct in its claim that there is no untheory-laden scholarship or science. We cannot collect "facts" without a theoretical framework to dictate what "facts" to collect and how to arrange them. *Of course there is an irreducible core of ideological assumptions underlying science*. Where anti-evolutionists go awry, as I have been pointing out for years (unoriginally), is in their conflating that very limited core with the larger set of assumptions constituting materialism, or positivism, or even evolutionism. Our necessary assumptions are the minimum set to allow science to be done at all, but they do not outlaw the potential existence of entities beyond the reach of science. To do science does not require an oath of atheism.

So did Michael Ruse give away the store? He merely upset those

scientific practitioners who really believed the self-justifying positivist propaganda about ultimate objectivity. Can we still do science even when we realize it is not isolated from society? Sure we can. Will we have more trouble dealing with our critics? Maybe, but given how unsubtle both sides have been in these "debates," that should raise the overall quality of discourse. Darwinism is a philosophical preference, if by that we mean we choose to discuss the material Universe in terms of material processes accessible by material operations. We could choose to look at a thunderstorm and explain it by saying "the gods are angry." You bet.

I thank Michael Ruse for letting the cat out of the bag. Those who know cats well had already identified the species by the odor.

Arthur M. Shapiro is Professor at the Center for Population Biology, Division of Biological Sciences, Section of Zoology, University of California at Davis.

❖
If all perspectives are valid, on what basis do critics claim their position to be superior to the one attacked?
❖

Book Prices and Science Education

According to surveys by the American Association for the Advancement of Science (*Science* 1993, 259(1): 107, 1 January), the average per-volume cost of technical books in the natural sciences was \$76.78 in 1992. The average for all books was \$57.58. This compares with 1987 prices of \$59.06 and \$47.37.

The averages are based on hard-cover prices except for books which are only available in paperback. This provides a basis for

measuring the costs to libraries and scholars independent of cataloguing, storage, etc. People used to "popular" book prices have complained about novels "breaking the \$20.00 barrier;" scientists long for such prices they hear about from their parents!

These prices reflect the expenses of producing technical books in small numbers and add to the woes of scholars in rich countries, let alone in poorer ones.

Keeping Tabs

Hare Krishna View of Evolution and Biology

Hare Krishna believers revere the teaching of their founder, A.C. Bhaktivedanta Swami Prabhupada. His views on evolution might be summarized as very negative, and in part this comes from a rejection of materialism. However, his published comments also demonstrate an ignorance of science and the writings of Darwin.

Hare Krishna antievolutionism is summarized in the ubiquitous airport book, *The Science of Self Realization* (ISKCON, Los Angeles; 1977), conducted in his typical question-and-answer format, the founder says: "... so many fools in the guise of scholars, scientists and phi-

losophers are misguiding the whole world.

"Q: Of course so much is being written about Darwin's theory. In any library there are hundreds of books on his theories.

"A [Prabhupada]: Do they accept or reject them?

"Q: Generally they accept him. But there are some who are very critical.

"A: Darwin speaks about the evolution of the species of life, but he has no real information about spiritual evolution. He knows nothing about the progress of the spirit soul from lower forms to higher forms.

He claims that man has evolved from monkeys, but we can see that the monkey is not extinct. If the monkey is the immediate forefather of man, why is the monkey still existing?

"Q: Darwin says that the species are not created independently but are descended from one another.

"A: If there is no question of independence, how can he abruptly begin with a certain species? He must explain how the original species came into existence" (pp. 255-256).

Later, on page 268, he adds that, "Our bodies are created at a certain moment by sexual intercourse. The semen of the father emulsifies and takes a pea form, and the living entity, or soul, takes shelter in that form. . . ." [JRC] ❖

Creationist Bastion Battles Bankruptcy

Liberty University, spun off from Jerry Falwell's Lynchburg, Va. church, faces a \$73 million debt, according to the *New York Times* (18 Aug 1992). Formerly "Liberty Baptist College," Falwell's college is threatened with bankruptcy; trying to expand its appeal beyond theology students, it has been renamed, spawned 90 different majors, and currently enrolls 4500 students on its 160 acre campus.

Twenty-one years after its founding, it is foundering because it borrowed heavily in the 1980s heyday of the Moral Majority and televangelism. The Virginia Supreme Court ruled in 1989 that the creationist school was a place where "religion is so pervasive that a substantial portion of its functions are subsumed in religious function." Thus Liberty was turned

down for permission to issue tax-exempt bonds. Students there received \$15 million in federal aid last year and \$1.3 million in state aid. This year, examiners have questioned whether or not it is financially stable enough to receive continued federal and state aid.

Americans United for Separation of Church and State, an advocacy organization, has argued before the State Council of Higher Education against Liberty's appeal for continued approval, citing its continued religious nature (which the school denies) as well as its shaky finances.

When he founded Liberty Baptist College in 1971 (later to be renamed), Falwell said it was important to link the school to his ministry so "in the next generation we don't have another Harvard on our hands." ❖

Philosopher's 1981 Quote

"Three cheers to the fundamentalists in California who succeeded in having a dogmatic formulation of the theory of evolution removed from the textbooks and an account of *Genesis* included (but I know that they would become as chauvinistic and totalitarian as scientists are today when given the chance to run society all by themselves. . .). [Prof. Feyerabend (and readers): see the *Z Papers* article, page 16.]

—University of California-Berkeley philosophy professor Paul Feyerabend, *Problems of Empiricism*, Vol. 2; Cambridge University Press, 1981, p.163.

❖
Falwell:
We don't
want to
"have
another
Harvard
on our
hands"

❖

Letters

Honig Trial

In [your] front page article about the conviction of Bill Honig, it appears to me that identifying the trial judge by name was purposefully avoided. Why, assuming I am correct?

In . . . "Letters," Leroy Ellenberger uses a term which I don't find in any of my several dictionaries. He refers to a date as ca. "9545 B.P." I'm embarrassed to reveal my ignorance, but what is the meaning of "B.P.?"

NCSE is sorely needed, and the efforts of all of the clear-sighted and dedicated people involved is recognized and appreciated. Thank you.

Robert E. Booth
Santa Clara, CA

Remember that you and all members are among the "dedicated people" you praise! To answer your queries: The name of the judge was omitted accidentally: The Hon. James Long, Sacramento Superior Court. In the effort to get the story out in the right number of column inches, the detail was lost for no policy reason whatsoever. I was not present and didn't hear the arguments, so I relied on descriptions and quotations. (See more coverage this issue.) B.P. means "Before Present" (see note on p. 19).

Religion Critique?

Since the creationists base their claims and arguments on the bible, wouldn't it be simpler to debunk that—pointing out its many inconsistencies and contradictions, as well as the history of its

compilation, instead of trying to convince them by scientific arguments?

Zara Van Wichen
Saratoga, CA

I hope we address the more neutral audience out there, interested to know if creationist claims are good science—and if not, why not. We are not really trying to "convert" true believers but rather to demonstrate to publishers or school boards or teachers under great pressure that there are specific answers to strident claims against evolution education. We also try to present news about good science, news about evolution, etc., along with occasional forays into theology such as the C/E 31 article on "appearance of age" claims by creationists or a 1985 article of mine on "Giants and Biblical Literalism." . . . We shouldn't forget that many fundamentalists or biblical literalists do not endorse teaching their ideas as science, open to disproof by experiment!

New Topics

Do you know of any creationist reaction to the DNA basis for evolutionary conclusions and/or the theory of punctuated equilibrium? If so, please consider the effect of the DNA and Punk ek theses on the big debate, as the subject of [future articles].

M.K. Stone
Philadelphia, PA

Both are hot creationist topics of misunderstanding. We've published on them before and will continue to do so. Scott's article on Colin Patterson in 12(4) is one example of the response by evolutionists to creationist misinterpretations. See the C/E Index issue for other references.

2-Dimensional Matter

The ICR has new scientific proof that God exists. How else can we explain the happy circumstance that DNA was created in in three dimensions, not two?

This is the question A.E. Wilder-Smith gives us in *ICR Impact* 236, February 1993. He goes on to tell us that had DNA been created in only two dimensions, it would be thousands of miles long and would not fit in our tiny cells.

In his zeal to show that evolution is false, Dr. Wilder-Smith seems to have forgotten geometry. Two-dimensional entities, a shadow, for example, take up no space at all. The question we should be asking is, "Why are we stuck with this bulky 3-D stuff?" Did God goof, or is Wilder-Smith pulling our collective leg?

William Thwaites
San Diego State Univ., CA

Rutherford Institute

I opened my *Stanwood News* this morning and was greeted by as full-page ad asking, "Is God Illegal in Our Schools?" So you're right—they don't "just go away." The ad was paid for by a local resident; the text comes from the Rutherford Institute.

Mark Zingarelli
Stanwood, WA

Founded in 1982, The Rutherford Institute is a conservative think tank/foundation which has emerged as a leader in church/state law suits as an advocate of what some call a literally theocratic but non-sectarian position. Copies of their ad are free: write the R.I., P.O. Box 7842, Charlottesville, VA 22906-7482.

Review Policy Criticized

On 17 December, *Nature* published a review by G.M. Marsden of the book, *The Creationists*, by Ronald Numbers, including a photograph of two Institute for Creation Research stalwarts captioned: "Making waves: Henry Morris and John Whitcomb in 1984. Their influential book *The Genesis Flood* (1961) was a classic of creation science."

I wrote protesting it to *Nature*, and so did Norm Horowitz. Our letters were rejected. We were told "it is not our usual practice to publish letters about book reviews."

I hope that readers of *C/E* will write to *Nature* objecting to their action. Marsden's review does not reflect what Numbers said about *The Genesis Flood*, a book that is full of errors and should not be described as an influential or "classic" work in science.

Thomas H. Jukes
Dept of Integrative Biology
UC-Berkeley

Address Correction Requested

13:1

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Inside

2

Editor's Desk

4

News

10

Tracking Those
Incredible
Creationists

14

NCSE News

16

Resources

18

Keeping Tabs

23

Letters

❖

3

Jurassic
Park

4

CBS Ark
Hoax
Exposed

Cal District Continues Creationist Activity

Eugenie C. Scott

Vista, CA, antievolutionism made national headlines this summer. As reported in *NCSE Reports* 13(1):1, Vista's majority creationist school board claimed in January, 1993, that they had no interest in introducing "scientific" creationism into the curriculum. However, within two months, John Tyndall, an employee of the Institute for Creation Research, had requested that the textbook evaluation committee approve for classroom use the creationist book, *Of Pandas and People* (for a review of *Pandas*, see *NCSE Reports*, 10(1):16-18).

In a devastating critique, teachers rejected the book on all accounts. Of interest is the fact that the teachers largely ignored the religious and philosophical problems raised by the book: it was rejected primarily because it represented bad science and bad pedagogy. (Copies of their evaluation are available from NCSE for \$.50 and SASE.) Excerpts:

book is not in alignment with the State Framework because it does not offer data based on testability, objectivity, and consistency as called for in the Framework. The book's premise concerning intelligent design is not put forth within a logical construct of facts and hypotheses.

Does the book provide accurate, reliable, scientific information? Carefully selected scientific information is refuted using philosophical rather than scientific arguments.

(Is the learning experiential? How does it relate to real life issues?) No. This text is purely discussion. It does not involve the learner in activity-based experiences. Even the teacher's guide is a standard testing device that does not challenge the student with higher-order, open-ended questions.

Should this book be used as a supplemental resource? Students' knowledge and understanding of science would not be strengthened by the use of
Vista, cont'd on p. 22



Catch you on p. 3...

Is the book in alignment with the State Framework? *The*

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P.5 art from C/E VI cover, 1981, c Andrea J Lahrs

A recent caller amazed me with her question, "Which side are you on?" After we spoke for a while, I learned that I sometimes seem to take for granted that readers know where we stand—and include some material not overtly explained (a terse obit for a creationist leader, for example, which did not denounce his viewpoint clearly). She had subscribed on the basis of a mass mail letter because she opposed creationism in the schools and was not particularly interested in our publications and had not really read them. Yet her first look at the *Spring Reports* worried her and, she said, other scientists she showed it to—were we actually creationists? [Answer: No.]

A lot of support comes from people who "just" support our objectives. But her questions should remind more active members and authors and debaters NOT to assume audiences know where you stand.

My caller also asked why we don't always publish affiliations and credentials of contributors. We don't restrict our pages to people with impressive-looking titles, and we don't publish *home* addresses. The author of anonymous items in *Reports* is usually your editor. Typically, I summarize clippings and info submitted by readers, like any news editor, and I try to acknowledge sources or attribute authorship to others when appropriate.

For the record, Eugenie Scott, NCSE Executive Director and Publish-

er, has a Ph.D. in Anthropology from the University of Missouri, specializing in physical anthropology, and she has extensive teaching and research experience in her field. I also have a Ph.D. in anthropology (Columbia U). Board members are a cross-section of people interested in good science education. Past-President Schaedewald is a freelance science writer; President Friedman is a long-time public school biology teacher now teaching at Nassau Community College after teaching at the Bronx High School of Science and Hofstra University; Godfrey, a primatologist and Harvard Ph.D., is Professor of Anthropology at UMass-Amherst; Hastings is a Texas high school science teacher with a physics Ph.D.; Dr. Padian is a Berkeley Professor of Paleontology and dinosaur expert; Dr. Lazen is a biologist and an official at the National Academy of Sciences; Cohen has liberal arts education and development training; West is a museum consultant and Ph.D.

Arguments should not be won by comparing credentials, but NCSE officers *do* have 'em. And members can use NCSE to find experts when a creationism battle erupts in their neighborhood—we offer an extensive network of people throughout the US and Canada via the Committees of Correspondence. CCs incorporate people who respond to crises, and when things are quiet they tend to fade away, and when crises erupt they are a grassroots network which reactivates as needed.

John Cole

Jurassic Park

Kevin Padian

Jurassic Park is a triumph, from a paleontologist's point of view. My first reaction was, no way these things aren't real. If you're about six years old, of course, you'll ask some tough questions. (The average six-year old has a whole brain lobe devoted to dinosaurs, and fills it with the wisdom of countless dino books and documentaries, most by people who don't know the first thing about paleontology, unfortunately.)

Nobody uncovers a dinosaur skeleton as fast as the crew in the movie because we don't excavate plastic models covered with loose sand. The remote image sensor at the dig calls up on the screen a buried dinosaur skeleton, which is possible but just horribly expensive right now. (Note to potential donors: anyone who'd like to invest about five figures in some high tech dino research, give me a call—I'll show you some even cooler stuff you can buy us!)

Throughout the movie, the dinosaur we call *Deinonychus* is called the name of its smaller Asian cousin, *Velociraptor* (it's sexier). Name aside, how accurate is the movie? As with all the dinos portrayed, my best answer is "cutting edge." Everything was carefully researched, and most of the worthwhile new ideas were incorporated. Where things stray, the reason was mostly cinematic. For example, *Velociraptor* is really about the size of a large dog, and its Montana cousin was about human-sized. But the movie actually anticipated science, because as it was being filmed scientists discovered an even larger critter, *Utahraptor*, which dwarfs the movie raptors. Yes, sometimes

a specific bone is misidentified, or a dino's chewing action is wrong. But what of the *interesting* things—high intelligence, hunting in packs, incredible agility? Believe it.

T. rex is clearly the best new actor since Bart Simpson. But one thing I don't get. The script says he can't see you if you stand still, but this tactic doesn't fake out the *Velociraptors*. Dinosaurs like all reptiles (including birds) had lousy senses of smell (or so say the olfactory lobes in their brains) but excellent sight. Some probably had color sight and thus could have been brightly colored, like birds. Dogs and other mammalian carnivores are color-blind and spot prey by movement (this is why dogs appear to stare blankly across fields, except my dog who stares blankly all the time). Any carnivore is also a scavenger, and lacking a good sense of smell, *T. rex* would have needed good eyesight (like a vulture) to recognize dead or live prey and not starve.

Dilophosaurus, the chirpy little spitter, was a particular delight (and, with *Brachiosaurus* the only Jurassic dinos in the movie—the rest were from the following period, the Cretaceous). There's only one *Dilophosaurus* specimen in the world, and we have it at Berkeley; it was excavated in the 1940s by Dr. Sam Welles. It's about three times as large as the critter in the movie, though, and although one scientist suggested a gap in the tooth-bearing bones might have held a venom canal, it turns out to be just a gap. We don't have any evidence for a flaring collar, but that's easily explained cinematically by the fact that park scientists added in DNA from other species to fill gaps—in this case, today's frilled lizard.

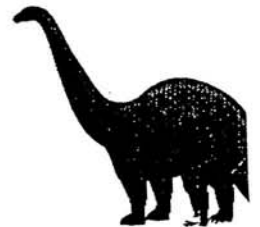
Despite the reaction from some people that the movie misrepresents genetic engineering—we really can't clone dinosaurs, but they should remember this is science fiction!—most people will probably learn more about DNA and genetic engineering from the "Mr. DNA" cartoon sequence than from all the world's molecular biologists put together. It's a shame we can't have graphics this good in every classroom. The movie shows the interdisciplinary focus of science all but lost in textbooks. Today's paleontologist has to know geology, fossils, genetics, molecular biology, computers, and a dozen other fields—or work with people who do—to be on the cutting edge.

Tons of newsprint have been spent on the question of the bioengineering ethics in *Jurassic Park*. Remember, though, that as in *King Kong*, which this movie resembles in more than one way, it was the impresario, the financial entrepreneur, who undertook the project in the first place. The movie is a great argument for the need that every citizen understand enough basic and current science to make intelligent decisions and participate in the process of scientific discovery and development, in the marketplace as well as in the voting booth.

We paleontologists are on our way to the field to find out more while we wait for the sequel—*"Cretaceous Park?"* ♦

Abridged from a much longer review—Ed.

Kevin Padian is Curator, Museum of Paleontology, University of California-Berkeley and an NCSE Board Member.



CBS TV's Noah's

Robert Schadewald

Time Magazine exposed CBS Television's February "Noah's Ark" pseudodocumentary as a hoax in July 1993, with some help from NCSE (see *NCSE Reports* 12(4):22). Leon Jaroff, long-time Time Life science editor, investigated the CBS claims and found they were based on fraud and deception.

Despite a narrator's claim that it was "not a religious mission but an archaeological quest," the program was straight creationist propaganda. It was heavily laden with familiar creationist "experts," such as Henry Morris, John Morris, Walter Brown, and Carl Baugh. A few token skeptics appeared ever so briefly, but their comments seemed ineffectual and were quickly buried by Arkeologists. (But: The entire program—including skeptics' comments—apparently was scripted by creationist Dave Balsiger!) One skeptic, Rabbi Sherwin Wine, was filmed with his face carefully lighted from below, giving him a remarkable resemblance to popular depictions of Satan. You get the idea.

Many NCSE members wrote to CBS to complain, usually citing specific falsehoods and/or misrepresentations; some sent copies to local CBS affiliates and local newspapers. Some wrote several times. Only two that we know of (Jukes and Padian) received any reply from CBS, and those replies were evasive and nonsensical. A few local newspaper letters columns carried these complaints. CBS simply ignored critics and did not even send a perfunctory "thank you

for your comments" which goes out to most letter-writers.

Not surprisingly, the creationist reaction to the broadcast was more favorable. John Morris of the Institute for Creation Research reviewed it in the April 1993 *Acts & Facts*. Although he noted that "many of the facts were somewhat overstated," the only real error he found was a misidentified photograph. The *Bible-Science News* was more enthusiastic, as was the *Christian News*.

The show prominently featured George Jammal, presented as an Ark eyewitness. Jammal claimed that he and a companion, Vladimir, had climbed Ararat in 1984 and discovered the Ark. The old boat was well preserved. Jammal and Vladimir crawled inside and saw animal cages. Naturally, they took numerous photographs to document their find. Unfortunately, when Vladimir was backing up to get a good picture of Jammal with the Ark in the background, he fell over a cliff, camera and all! So all Jammal had to show for his adventure was a small piece of wood from the Ark.

George Jammal's story was utterly preposterous, and I recall thinking that he was an obvious fraud. On the other hand, his story was not significantly more preposterous than that of the usual Ark eyewitness. Whatever they may have thought privately, the Sun/CBS crew found Jammal's story good enough for their purposes.

In fact, Jammal was perpetrating a hoax, but not for the reasons I thought. A part-time actor, Jammal had been telling a version of this story for years before the Sun/CBS

team got wind of it. Enter Gerald Larue, Emeritus Professor of Biblical History and Archaeology at the University of Southern California and a founder of the Committee for the Scientific Examination of Religion (CSER). Larue, who had known Jammal for years, had been finagled into appearing on a previous Sun/CBS Bible show and was upset about the dishonest way his statements had been edited. When Jammal told him that Sun/CBS had contacted him about his Ark story, Larue encouraged Jammal to do it. He also coached Jammal on how to present his story, although Jammal now denies having lied. Neither Larue nor Jammal had ever been on Mount Ararat, but no matter. The result suited Sun/CBS's purpose.

When perpetrating such a hoax, fair play requires that the victim be provided with an out. For this purpose, Jammal literally cooked up a piece of Ark—he baked a piece of pine in his oven to make it look old! Sun/CBS could easily have had Jammal's wood carbon-dated, had they so wished. Needless to say, they did not.

Actually, the sting nearly backfired. Soon after CBS aired the program, Larue and the Committee for the Scientific Examination of Religion issued a press release criticizing the program as pseudoscientific and dishonest and exposing the Jammal hoax. It fell flat! The story made a few smaller newspapers and journalism reviews, but mostly it was massively ignored.

One religious paper picked up part of it. The *Christian News*, a conservative Lutheran tabloid, ran a story in its 29 March 1993

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"I think the
CBS
network
is
shameless."
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Ark Hoax Exposed

issue entitled "CBS Program on Noah's Ark Labeled 'Irresponsible.'" The article, attributed to the Religious News Service, was entirely based on CSER's longer press release. Although the Jammal hoax figured prominently in the CSER press release, it is not mentioned in the RNS/*Christian News* story. Neither are the other substantive criticisms. Someone at *Christian News* (or RNS) thought it best to conceal Jammal's Noah's Ark hoax from the believers. Ironically, the *Christian News* is notorious for proclaiming the Holocaust a Jewish hoax!

The Jammal story received broader exposure in archaeologist Richard A. Fox's article "'The Incredible Discovery of Noah's Ark': An Archaeological Quest?" appearing in the Summer 1993 *Free Inquiry*. While Fox's article was in press, NCSE supporter Leon Jaroff, long-time science-editor at *Time* and first editor of *Discover* magazine, got wind of the story from NCSE. We sent him the CBS videotape and discussed the problem with him at some length.

Jaroff exposed the hoax to a wider audience in "Phony Arkology," a full-page exposé in the 5 July 1993 *Time*. While CBS claimed they had innocently purchased the program from Sun International Films, Jaroff left no doubt that CBS was ultimately responsible for deceiving the public, whether through negligence or complicity. The Associated Press did an immediate follow-up story.

At last CBS couldn't ignore its responsibility, right?

CBS's Beth Comstock told the AP that the program "was an entertainment special, not a news documentary. We certainly were not aware of any alleged hoax." Silence fell for a week, until Howard Rosenberg of the *Los Angeles Times* did a widely syndicated follow-up story. CBS spokeswoman Susan Tick told Rosenberg that they were "investigating and trying to get substantiation from the producer."

Recently, I called Jaroff and asked whether *Time* had received a more satisfactory response from CBS. Nope. CBS apparently has no standards of integrity for programs from their entertainment division. They hold viewers responsible for distinguishing "entertainment" like the Ark show from documentaries produced by their news division. [The News Division did not respond to NCSE queries about the show.]

Jaroff doesn't buy this. "I think the CBS network is shameless," he says, "and they have behaved shamelessly throughout our investigation. They don't care. They are unethical. They are beyond embarrassment."

Sadly, Jammal's absurd story about finding Noah's Ark may not have fooled either Sun International Films or CBS. Perhaps they only found it *useful*. Consider that long after detailed scientific critiques and protest scriptwriter Balsiger and CBS struck again on Saturday 15 May 1993 with another Balsiger-written documentary, "Ancient Secrets of the Bible." If possible, it was worse than the Noah's Ark show. I called CBS soon afterward, and the gentleman I spoke to chuckled when I told him

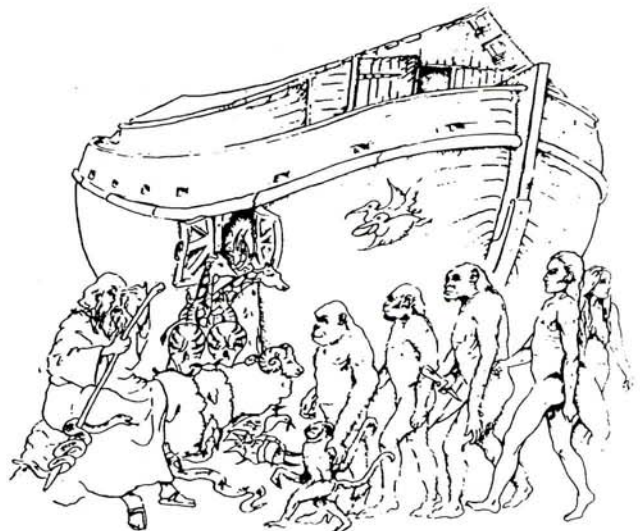
the program was disgraceful. He said that the feedback they received was overwhelmingly favorable.

These programs reportedly got high ratings for their hour, so CBS can chuckle all the way to the bank. Intellectual integrity apparently has a place in the great wasteland only when good for the bottom line. CBS now claims no further Sun coproductions are planned (at least one more had been announced), but why not? Wouldn't more fraud be good for the stockholders?

NBC, caught faking a fiery pickup truck crash, soon found itself eyeball-to-eyeball with General Motors lawyers packing double-barrelled briefcases. Seized with a sudden passion for journalistic integrity, NBC publicly retracted the crash story, apologized, and went through some cleansing motions. But simple truth, unlike General Motors, has no lawyers. CBS apparently adjusts its integrity accordingly.

Robert Schadowald is NCSE Past-President.

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CBS can
chuckle all
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In the Trenches . . .

Eugenie C. Scott

Those of us who do not teach at the K-12 level may be surprised at the amount of official antievolutionism that is found there, especially among administrators. From time to time we will run excerpts from the "war zone" to give a flavor of what many teachers are experiencing.

A high school science teacher from Oklahoma sent us the following in June:

In March we were told (as always) to review the course description for the courses to be printed when the students picked their next year's schedule. The other Biology teacher showed me what he has put in for X number of years and asked if I had any problem with the description. I had none whatsoever.

About two weeks later the course description came back to me with EVOLUTION circled and a hand-written note from the superintendent asking if we couldn't come up with a better word. I wrote, "I'm sorry—evolution is what I teach and there is no better word" and signed my name. I then took it to the other Biology teacher, and bless his heart!—he signed his name right under mine.

Three days later we were in the principal's office being told, "Yes, there is a better word and you'd better come up with it." He told us to go right on teaching just like we always had, but the course description would not say "evolution." The other biology

teacher pointed out that it had said "evolution" for at least 5 years and maybe 11 (how long he has been there) and no one had ever complained. Tough!! We have a big bond issue coming up, the state board of education is under fire across the state, and evolution will not be in our course description. Mr. _____, having more sense than I do, picked "natural selection," which is what it now says in the Biology I course description.

A teacher from Missouri wrote us during the same month:

I am a high school teacher of social studies and language arts but because I have a degree in anthropology, I all too often am a target for the "Do you believe in evolution?" question. This I can handle, but now Gish's book(s) are appearing in the hands of high school students and while I can point out lapses in reasoning, etc., there are many areas of science of which I am ignorant.

Further, each year our local Bible college holds its two day creation science/bash evolutionists symposium. One of our middle school PTOs helped finance a social studies teacher to attend a creation science workshop in St. Louis and he taught creationism for the prehistoric man unit in his class! A junior high school science teacher informs his class he does not "believe" in evolution prior to teaching it! A local preacher has lodged complaints naming me a liberal and secular humanist, which I gather translates roughly as "atheistic anti-christ." HELP!

At a teacher's conference, a California teacher described to me problems he had teaching evolution in his district. A group of parents met with him to complain, and he explained that evolution was part of the state curriculum and it was important that he teach it. One of the parents burst out in frustration, "But you don't have to teach it like you believe it!"

NCSE responded to all these requests for help and many others.

But it's a David vs. Goliath battle, we're David, and we need help making slingshots and paying for their distribution. ❖

Creation/Evolution Highlights of Back Issues

Issue 9

- Dilemma of the horned dinosaurs
- Old time religion and the new physics
- Six "Flood" arguments creationists can't answer

Issue 10

- True vestigial structures in whales and dolphins
- Whales and evolution
- The turtle: A creationist shell game?

Issue 11

- The impossible voyage of Noah's Ark (special issue)

Issue 15

- Paluxy River footprints (special issue)

News

NYC School Board Elections: Did Creationists Gain?

Jack Friedman

On May 4th, New York City held school board elections. National publicity was generated by the spectacle of America's supposedly most liberal city facing political challenges from the Christian Coalition and other religious right organizations. They fielded 90 candidates for the 285 local school board positions, and at press-time (end of June), 283 had been decided.

Of the 90 Christian Coalition-backed candidates, 50 were elected. Ralph Reed, Christian Coalition executive director said from his Virginia headquarters that the results were "a tremendous victory," and he indicated that his group is planning for future elections.

People for the American Way expressed pleasure that 40 of the 90 candidates were defeated and that many people had been elected to school boards sharing *their* views. A number of openly gay candidates won, for example, as did a number of people endorsing sex education, overcoming tremendous Coalition campaigning against them. In addition to conservative Protestant churches, the NY Catholic Archdiocese and some synagogues openly distributed the Christian Coalition pamphlet evaluating candidates' positions and practices on the sex issues. Certainly, the religious right did not take over the school boards.

Typically, the strategy of antievolutionists has been to win control of school boards quietly or incremen-

tally, year by year, winning a good percentage in each election until it looks like a "sudden" take-over. We won't see radical changes this year (although the respected liberal Chancellor of Education had been forced out, already, before this election).

The NYC campaign focussed on sex education, birth control and alleged endorsement of homosexuality (the School Chancellor's campaign for "tolerance" was caricatured as *advocacy* of homosexuality). The Christian Coalition scored a political "first" in NYC by gaining the support of the powerful

and conservative Roman Catholic Cardinal Connor and a number of orthodox Jewish groups for its candidates. The Coalition thus campaigned on the strength of religious conservatism involving the issue of s-e-x, not e-v-o-l-u-t-i-o-n, which might have made them a laughing-stock in New York. However, it is probably safe to say that the Coalition did not suspend its judgement that teaching evolution is literally the root of all evil, so we have probably just seen the election of a good number of antievolutionists to NYC school boards. "Stealth candidates" have been their trademark (see *Reports* 12(3):1). ♦

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Kentucky Law Tries To Evade Church/State Separation

John Cole

In the guise of opposing censorship, the Kentucky legislature approved a noble-sounding 1992 law to ensure that teachers are free to post on their walls "any excerpts or portions of the National Motto, The National Anthem, the Pledge of Allegiance, the Preamble to the Kentucky Constitution, the Declaration of Independence, the Mayflower Compact, the writings, speeches, documents, and proclamations of the founding fathers and presidents of the United States, U.S. Supreme Court decisions, and acts of the U.S. Congress, including the published text of the Congressional Record. There shall be no content-based censorship of American history or heritage in the Commonwealth based on religious references in

these writings, documents or records" (emphasis added).

Translation: posting prayers, creationist dogma, etc. is ok as long as it involves quoting a VIP. Since the *Congressional Record* prints anything a Congressman mails in, the Institute for Creation Research and Duane Gish may soon emerge among the Founding Fathers. The ICR is urging that every state enact similar legislation.

Few could object to a freedom to post news articles, but a Constitutional issue arises in this situation where it is clear that the legislative intent was to promote religion by setting up a sort of anti-censorship smokescreen. Also, a bias towards religious, anti-evolutionist, etc. material would be a misuse of any freedom to post things. ♦

California School Super Nixed by Legislature

John Cole

When California Superintendent of Public Instruction Bill Honig was forced from office (see *Reports* 12(4) and 13(1), Governor Pete Wilson nominated a Republican state senator, Marian Bergeson, to succeed him. Bergeson was widely opposed by educators because of her track record in the legislature which they viewed as bad for public schools.

In addition, Senator Bergeson's testimony at Senate confirmation hearings raised eyebrows when she said that she believed the Earth is about 300,000 years old and that evolution should be taught "as a theory." Honig had dramatically increased California's commitment to science education and evolution education in particular, drawing the wrath of the Religious Right in the process.

Widespread political opposition and acrimonious debate led to Bergeson's nomination being vetoed by the California state senate. At press time Governor Wilson had not named a successor. An election for a full 5-year term will be held in 1994.

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What's Behind the Vista and Louisville Strategies

Eugenie C. Scott

Both the Vista school board resolution and the Louisville curriculum guide reflect a loophole creationists find in the 1987 Supreme Court decision, *Edwards v Aguillard*, which noted that teachers had the flexibility "to supplant the present science curriculum with the presentation of theories, besides evolution, about the origin of life." Creationists in Alabama, Texas, California, Ohio, and elsewhere have interpreted justice Brennan's words as a green light to teach "alternate theories to evolution," "challenges to evolution," and even "arguments against evolution"—which of course are euphemisms for creation "science" (See *NCSE Reports* 9(2):14-15).

Needless to say, from a scientific point of view, teaching as in Vista, "scientific evidence that challenges" evolution makes as much sense as teaching "scientific evidence that challenges heliocentrism." The same problem exists with the Louisville curriculum guide, which directs teachers to

teach "alternate theories to evolution." There aren't any, if "theory" is taken in its scientific definition rather than its lay definition of a guess or a hunch.

That evolution took place is firmly established. How it took place, by what mechanisms, which creatures are ancestral to which—these ideas are in dispute, but what the Vista and Louisville board members seek is not to present legitimate disagreements of this sort, but to question whether evolution occurred or not.

One might believe that such regulations are innocuous because they are empty of meaning, but the problem extends beyond the exact wording of such regulations or requirements. We have found in many districts that merely making evolution a "controversial issue"—as such regulations do—means that many teachers will cease teaching evolution at all. Because the goal of the creationism movement is actually to get evolution out of the curriculum, good science loses in such cases—whether or not creationism is ever taught. ❖

Newsletter and Journal Index on Computer

Member Christopher Stassen has compiled a computer "Scan" Index to *Creation/Evolution* and *NCSE Reports*. From issues 1 to 31 for the journal, and 1-13(1) of the newsletter, an IBM-compatible computer can search according to author, topic, and keywords. Looking for a critique of Flood Geology? You can easily "scan" the journal or

the newsletter to see what has been published. We use it in the NCSE office all the time. This is not the same as the recently-published journal index prepared by Ken Saladin, which is not yet available on diskette. The Stassen diskette is available for \$5 through NCSE: See "Diskettes" order information in Centerfold. ❖

News

Gould To Debate Creationist—NOT

John Cole

Kent Hovind, a heretofore obscure Pensacola, FL evangelist, has made news in the Midwest with the announcement that he would soon be debating Harvard University's Stephen Jay Gould. "I suspect that Gould will back out," Hovind said. "He is probably 10 times smarter than I am, but I assure you I will slaughter him in a debate" (*Peoria Journal Star* 6/25/93).

Long an opponent of creationist-debating, NCSE Supporter Gould has turned down scores of challenges to debate creationists, so we suspected something was wrong here. Hovind's vision of Gould sitting in his office at Harvard, getting cold feet at the prospect of coming up against Kent Hovind was a bit hard to believe, so executive director Eugenie Scott asked Gould about the matter.

"This just goes to show you really shouldn't believe everything you read," Gould writes. "I have never heard of the man and therefore cannot have agreed to anything with him." He further muses that Hovind could be using the "obviously phony tactic of claiming that he challenged me to a debate when he didn't and then claiming that I backed out when I didn't appear."

The planned debate is a complete fabrication, in other words. Readers should spell this out via letters to local newspapers if they hear this claim from Hovind. NCSE has heard from two people (Karen Bartelt and Ranse Trax-

ler) who already have challenged this bogus debate claim. Scott is interested in tracking any further examples of this fabrication—let her know if you see or hear Hovind claims about this nonexistent debate arrangement. The point is not to beat a dead horse but rather to make clear a common, if reprehensible tactic.

Hovind, by the way, has for several years offered a \$10,000 reward to anyone who can offer empirical evidence that evolution has taken place. (He is upset about the film *Jurassic Park*, since there never was a Jurassic.) Unsurprisingly, no entrants seem to win the prize. ♦

Another Creationism Trial Brewing?

Eugenie C. Scott

In 1986, Louisville, OH had a curriculum guide requiring teachers to "contrast, compare and discuss alternatives to the evolutionary theory, particularly creationism." After the 1987 Supreme Court decision, *Edwards v Aguillard*, such wording became plainly illegal (see, p. 8). In the early 1990's, the Board wrestled with how to word the curriculum guide to respond to community pressure to teach creationism but still stay within the law. The Board's legal firm advised it that because of the *Edwards* decision, they could not require the teaching of creationism, but *could* teach "alternative theories to evolution" (*Canton Repository*, 9/30/92, B-4).

In September 1991, the Board adopted a curriculum guide that stated in various places that teachers should "contrast, compare and discuss alternatives to evolutionary theory" in junior high, and in high school biology, "Develop an appreciation of theories on evolution and it's (*sic*) alternatives," and the familiar, "contrast, compare and discuss alternatives to evolutionary theory." The goal here, of course, is

to teach "scientific" creationism; as stated by Andy Aljancic, a pro-creationism citizen who frequently addresses the school board meetings, "creation, as far as I'm concerned, is the only alternative" (*Canton Repository*, 9/10/91). By eliminating the "c-word," Board members seek to avoid legal entanglement.

In the fall of 1992, the Ohio ACLU requested that Louisville drop the "alternatives to evolutionary theory" wording in the curriculum guide. The district subsequently voted 3-2 to retain the wording. Local activist Andy Aljancic assured the district that the Ohio Rutherford Institute, a legal organization supporting religious right causes, would defend the district *pro bono* (ie, free) if a lawsuit were filed. By June, 1993, the ACLU had not yet filed. ♦

♦
"creation,
as far as
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♦

Computer Bulletin Board

To call the NCSE-FREENET computer bulletin board use the number (216) 368-3888.

The BBS is up and running, and access via other network system remains the same (Fidonet, Internet, Usenet, etc.)

Tracking Those

Cold Comfort for Creationists in Ruse Talk

Eugenie C. Scott

Michael Ruse's off the cuff remarks at NCSE's American Association for the Advancement of Science symposium have been transcribed and are being circulated among creationists. Given how creationists have exploited some off-the-cuff comments of evolutionists (see *NCSE Reports*, 12(4):14), we can expect to find this transcript and out-of-context quotations from it showing up around the country (see accompanying story).

It is already showing up on the creationist lecture circuit. In the last issue of *NCSE Reports* (13(1):20), Art Shapiro reports that lawyer Phillip Johnson, author of the anti-evolution book *Darwin on Trial* (reviewed in *Creation/Evolution*, 31:47) claimed that Ruse's current position, based on the transcript, is that Darwinism is not really a scientific inference, but rather a philosophical preference. This should come as a shock to individuals who know Ruse's books (*But is it Science? The Evolution-Creationism Controversy; Darwin Defended*, etc.) and who recall that his views prevailed in the judge's conclusion in the 1982 *McLean v Arkansas* trial that "scientific" creationism did not qualify as science.

What, exactly did Ruse say? Has he "lost the faith?" Can it be that this internationally-known Darwinian scholar no longer distinguishes between religion and science?

Be aware that Ruse did not speak from prepared notes, or any notes at all. The brief comments were

spontaneous; the transcript reflects this. He rambled, digressed, and left points dangling, but a careful reading of the transcript (copies available through NCSE—see "Resources" section) will demonstrate that by no means is Johnson reflecting Ruse's views. There is no backsliding from his conviction that creationism is not science and evolution is:

I don't come here preaching creationism or preaching, you know, some message of negativism: folks give up, modern philosophy of science is now showing that science is just as much a religion as creation science, so frankly folks there's nothing that you could do, and if I could go back ten years to Arkansas I'd just reverse everything. (transcript p. 8)

There are, Ruse claims, (p. 3 of the transcript) "certain metaphysical assumptions built into doing science," and of course, this would be true of evolution too, as part of science. Obviously, there are metaphysical assumptions built into religion—but this does not make religion and science equivalent. If I am a mammal and my cat is a mammal, this does not make me a cat. What is this metaphysical assumption, unprovable, but requiring acceptance on faith? Ruse says:

It seems to me very clear that at some very basic level, evolution as a scientific theory makes a commitment to a kind of naturalism, namely, that at

some level one is going to exclude miracles and these sorts of things, come what may. Now, you might say, does this mean it's just a religious assumption, does this mean it's irrational to do something like this? I would argue very strongly that it's not. At a certain pragmatic level, the proof of the pudding is in the eating. And that if certain things do work, you keep going with this, and that you don't change in midstream, and so on and so forth. I think that one can in fact defend a scientific and naturalistic approach, even if one recognizes that this does include a metaphysical assumption to the regularity of nature, or something of this nature. (p. 5)

To assume (yes, assume; it is not provable) that nature operates in a regular fashion, governed (and here I am adding to Ruse's comments, though I do not think violating them) by principles knowable through human reason and empirical observation, perhaps makes science based on an assumption (we can argue over whether this is a "metaphysical" assumption) but it hardly makes science a religion.

When the transcript is read in full (if somewhat rambling) context, it becomes clear that Ruse is discussing a philosophical point, rather than strategies for fighting creationists. He even seemed somewhat apologetic for bringing the point up, as if he were airing some sort of dirty scientific linen which would be somehow used against us by the other

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One can in fact defend a scientific and naturalistic approach
❖

Incredible Creationists

side. Actually, about all he was doing was reminding the scholars assembled not to use an old-fashioned philosophy of science called "logical positivism," and to publicly recognize that science, like religion, has unproven assumptions.

So what's the big deal? Personally, I have in many of my public lectures pointed out that science, like all epistemologies (ways of knowing), has unproven assumptions. The audience takes in stride our unproved but entirely reasonable assumption that the universe operates in a regular fashion, according to knowable processes. This is not too startling a revelation for the general

public, and Ruse is correct to point out that to claim that religion and science have nothing in common is erroneous. But this is decidedly not the same thing as claiming that science or evolution is "just another religion."

In closing, I quote one of Ruse's final comments, in response to a question:

Let me end certainly by saying that although I got on quite well with Johnson at the personal level, I still think that his book is a slippery piece of work. And you're absolutely right that he, like any lawyer, is out to win. That's the name of the

game in law. And certainly he can get points by shifting back and forth on meanings of naturalism, or if he can get a report on what Ed Manier (a questioner from the audience—ed.) and I were doing, and then sort of take it out of context, I've no reason to think that he wouldn't do that sort of thing.

Well, Michael, the transcript is in circulation. It looks like you were right.

[Eds. note—*The Summer 1993 Origins Research* features an article by Paul Nelson on the theme of Ruse's apostasy!] ♦

Teen Poll: Kids Favor Creationism

A January 1993 George Gallup poll (Religious News Service 6/23/93) shows that younger kids are strong creationism-supporters, but that support declines in the later teen years. 45% of teens 13-15 believe every word of the Bible is literally true, a figure which drops to 31% at age 16.

52% of teens believe humans have "developed" over millions of years from "lesser forms," via a process directed by God. 10% say "human development" took millions of years with God playing no role in the process. 14% view the Bible as an ancient book of fables, legends, history and moral teachings, "recorded by man."

49% of adults in Gallup's latest survey view humans as specially created ca 10,000 years ago.

This support for creationism is not surprising, given the educational system's bias against—fear of—

teaching evolution and the political pressure it faces. Perhaps it's slightly encouraging that kids do learn a little bit, but it is not at all encouraging to realize that so few do! Whether it's weak textbooks, stifled and/or ill-informed teachers, or whatever, the understanding of evolution still reaches few students, the poll suggests.

Many creationists, of course, will applaud, but others will bemoan the nonliteralist, theistic tendencies revealed. However, it's also worth noting that the Gallup polling organization has long been biased towards theism, if not direct scientific creationism; Gallup has worded polls for many years in ways which yield at least mildly biased results on this score. Notice the emphasis on odd terms like "human development," which biologists use to refer to embryology and growth, instead of "evolution!" (This euphemism for evolution prob-

ably increased the number by incorporating theistic evolutionists.)

505 teenagers were polled by telephone; the margin of error reported was +/- 4%. ♦

Overview of C/E Arguments

G. Richard Wakefield, NCSE's Ontario Liaison has produced a 61 page, profusely illustrated and referenced document explaining evolutionary biology with specific reference to creationist arguments and errors. "Biological Evolution: An Overview of Mechanisms and Evidence," an OASIS monograph, is a must-have for teachers, debaters, and anyone else who has to answer creationist claims. \$18.00 Canadian, \$15.00 US (Canadian members can write directly to P.O. Box 617, Beaverton, ON, L0K 1A). Available in the US through NCSE. See centerfold form. ♦

♦
45%
of teens
13-15
believe
every word
of the Bible
is literally
true
♦

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Bumpersticker #1

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NCSE Bumperstickers

See examples at left and right.
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The Creationist Movement in Modern America

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Still the best treatment of the creationist movement in social and political context.

New Audio Cassettes Available!

NCSE's 1993 AAAS symposium is now available on audiotape! Talks by Eugenie C. Scott, Michael Ruse, Jon Marks & Laurie Godfrey, William Thwaites, Ken Miller, and Howard Van Till. Set of 3 tapes: \$15.00.

Pamphlets from NCSE include:

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Bumpersticker #2

NCSE News

Classic Creationist Reprints

John Cole

NCSE past-president Bob Schadewald is probably the world's leading expert on the Flat Earth Society and its history and relationship to modern creationism. And if Hollow Earth and Geocentric aspects of creationism or similar warped geography is your game, Schadewald's the name to see. Directly and indirectly, today's "scientific" creationists use arguments from the flat Earth and geocentrist cranks of the 19th and early 20th century, even though most of them deny the connection.

Schadewald has just reprinted two articles and a booklet from the heyday of exuberant antievolutionism.

Ford's *Universal Gravity* . . . is an important 20th Century creationist tract newly available to modern readers.

"The Teaching of the Word of God Regarding the Creation of the World and the Shape of the Earth; in Fifty Questions, Answered by Scripture," compiled by Apostle Anton Darms, Christian Catholic Apostolic Church in Zion" (from *Leaves of Healing*, 1930) is a 20-pp. pamphlet copyright 1993, Paradox Publishing, 13204 Parkwood Drive, Burnsville, MN 55337; "Which Will You Accept? The Bible, the Inspired Word of God, or The Infidel Theories of Modern Astronomy," by Wilbur Glenn Voliva, Christian Catholic Apostolic Church in Zion (a 16-pp. pamphlet from the same source). These are available for 3.95 each or \$6 for both from the publisher (Paradox), postage paid.

These basic arguments are still alive in "scientific" creationism, and there are even serious believers in geocentrism and flat Earth ideas extant. These historic documents illustrate the age (and creakiness) of a lot of modern creation "science." ♦

Ooops! Price Corrections

To paraphrase a bumper-sticker, "typos happen," but some are doozies. Some are too minor to merit corrections, but in the recent Creation/Evolution Index some very erroneous details about publication prices appeared which should be corrected.

The current member price for *Voices* and *Reviews* is \$8, not \$6. The *Index* is \$10 (\$1 shipping).

Back issues of *C/E* are \$6@, 10 or more \$5@; shipping is \$1 for the first issue, .75 for each additional up to \$10 max.; a complete set of back issues (No. 1-30) costs \$100 + shipping of \$10.

Back issues of *NCSE Reports* and *NCSE Newsletter* (Vols. 1-12) are \$3 per issue, \$18 per volume; shipping is the same as above. Complete sets are \$175 + \$10 shipping; NCSE will invoice foreign shipping.

Creationist Books Reviewed

Liz Hughes has edited *Reviews of Creationist Books*, a 155-page book with 44 book reviews by people such as Stephen Jay Gould, G. Brent Dalrymple, Kevin Padian, Michael Ruse, Gerald Scoog, Karl Fezer, Ronnie Hastings, Frank Lovell, Francis Graham, and others. Hughes updated an earlier NCSE publication, *Reviews of 32 Creationist Books* with revised and updated reviews of older books still being marketed, new reviews of newer books, and omission of some material no longer used by creationists.

The paperback book (ISBN 0-939-873-52-4) is intended for school committees, creation-watchers, librarians, and others concerned with creationist books and textbooks. It's available to NCSE members for \$8.00—a 20% discount (see centerfold for ordering information), and please inquire about bulk rates.

Nelkin elected to NIH

NCSE Supporter Dorothy Nelkin was elected in Spring 1993 to the the National Institute of Medicine. The NYU sociologist of science was one of fifty people elected this year.

Congratulations!

NCSE News

NCSE Donors

A warm thank you to all of the individuals, organizations and firms that donated to NCSE throughout 1992, and special thanks to the following people who donated \$100 or more for their very needed support. Those in the Patron's Circle donated \$1000 or more—a level of support we appreciate and need to expand. (* notes an NCSE Board Member or Supporter).

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The Early Argument for Church/State Separation in America

James Madison (1751–1836)
“Father of the Constitution”
and two-term President of the
United States

It is of great importance in a republic not only to guard the society against the oppression of its rulers, but to guard one part of the society against the injustice of the other part. Different interests necessarily exist in different classes of citizens. If a majority be united by a common interest, the rights of the minority will be

insecure. . . in a free government the security for civil rights must be the same as that for religious rights. It consists in the one case in the multiplicity of interests, and in the other in the multiplicity of sects. The degree of security in both cases will depend on the number of interests and sects; and this may be presumed to depend upon the extent of country and number of people comprehended under the same government. . . In a society under the forms of which the stronger

faction can readily unite and oppress the weaker, anarchy may as truly be said to reign as in a state of nature, where the weaker individual is not secured against the violence of the stronger . . .

The Federalist, Paper No. 51

(Part of the 1788 argument against Governor Clinton . . . of New York . . . who opposed the new Constitution) ♦

Resources

(Listing items here or offering to distribute them does not imply NCSE endorsement or agreement; annotations are by the editor or various contributors. "SASE" = "Self-Addressed Stamped Envelope")

❖
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Altangerel, P., M.A. Norell, L.M. Chiappe, and J. M. Clark. 1993. Flightless Bird from the Cretaceous of Mongolia. *Nature* 362: 623-626, April).

Arsuaga, J-L., I. Martinez, A. Garcia, J-M Carretero, and R. Carbonell. 1993. Three Human Skulls from the Sima de los Huesos Middle Pleistocene Site i Sierra de Atapuerca, Spain. *Nature* 362:534-537. New discoveries re: Neandertal and modern Homo relationship.

Augert, E.R., K.D. Clements and N.R. Pace. 1003. The Largest Bacterium. *Nature* 362: 239-241. A prokaryote symbiont living in the gut of the surgeonfish is 600 micrometers long.

Ayala, Francisco J., and B. Black. 1993. Science and the Courts. *American Scientist* 81(3): 230-239 (May-June). Clear, polemical explanation of how science works and how courts should use "expert witnesses."

❖
Mims
actually
never was
hired and
then
unhired.

Bergman, Jerry. 1993. Censorship in Secular Science: the Mims Case. *Perspectives on Science and Christian Faith* 45(1):37-45. Supposedly hired as a columnist and then "unhired" when he revealed that he did not accept evolution. A creationist's view of the Forrest Mims-Scientific American argument. Available from NCSE for \$1.25 + SASE.

Bunney, S. 1992. The Amphibious Past of Whales. *New Scientist*

137(1865): 17, 20 March. Report on an apparently classic "intermediate" form.

Chown, M. 1993. All You Ever Wanted to Hear about the Big Bang. *New Scientist* 138(1869): 32-33. Not overly accurate, reviewer says.

Flam, Faye. 1993. Plugging a Cosmic Information Leak. *Science* 259:1824-1825, 26 March. Can black holes deplete the Universe of information by sucking it in and then evaporating? News report.

Fort, D.C. 1993. Science Shy, Science Savvy, Science Smart. *Phi Delta Kappan* 74(9): 674-682 (May). Discusses science illiteracy.

Greenwood, J.J.D. 1993. Theory Fits the Bill in the Galapagos Islands. *Nature* 362: 699 (22 April). Finch species and environmental pressures; new study.

Harker, Kent. 1993. Dr. Zark. *BASIS* 12(4): 1-3, 4. Critique of CBS "Noah's Ark" broadcast. SASE+\$0.75.

Herbert, Sandra. 1993. Essay Review of a number of recent Darwin biographies (Desmond & Moore, Mayr, etc.). *Isis* 84(1):113-124.

Hively, W. 1993. Life Beyond Boiling. *Discover* 14(5):86-91, May. Microbes that exist in temperatures above the boiling point of water.

Jensen, James A., and Kevin Padian. 1989. Small Pterosaurs and Dinosaurs from the Uncompahgre Fauna (Brushy Basin Member, Morrison Formation: ?Tithonian), Late Jurassic, Western Colorado. *Journal of Paleontology* 63(3): 364-373. Important

technical paper on bird/dinosaur relationship.

Kohl, Herbert. 1993. Over the Rainbow. *The Nation* 256 (18):631-636 (10 May). Reviews of recent books on education and some analysis of the cases of Bill Honig in California and Joseph Fernandez in NYC—both driven out by religious conservatives.

Lederman, Leon, with Dick Teresi. 1993. *The God Particle: If the Universe Is the Answer, What Is the Question?* NY: Houghton Mifflin, 434 pp, \$24.95. High energy physics history, jokes, etc. by ex-AAAS pres. and a prime backer of the Superconducting Supercollider; how Big Science works and why it should.

MacLean's. 1993. God Is Alive. *MacLean's*, pp. 32-37, 12 April. Survey of religious belief and practice in Canada. 53% of adults reject evolution.

Martin, R.D. 1993. Primate Origins: Plugging the Gaps. *Nature* 363: 223-234. Review article on fossil evidence and the problems of incomplete data.

McInerney, J.D., and R. Moore. 1993. Voting in Science: Raise Your Hand if You Want Humans to Have 48 Chromosomes. *The American Biology Teacher* 55(3): 132-134 (March). Discusses creationist tactic of having students vote on which of 2 positions is correct.

Mills, G.C., M. Lancaster, and W.L. Bradley. 1993. Origin of Life and Evolution in Biology Textbooks—A Critique. *American Biology Teacher* 55(2): 78-83 (Febr.). "A creationist article which produced a flurry of letters

Resources

in response in the following 2 issues."

Nature ed. 1992. Eppure si non muove. *Nature* x:xx. "The Vatican's half-hearted rehabilitation of Galileo will not prevent the recurrence of errors of the same kind."

Nelson, Paul. 1993. Transcript of Michael Ruse's comments during NCSE symposium at 1993 AAAS meeting, with addendum by Phillip E. Johnson. Available through NCSE for \$1.00 + SASE.

Perry, R.T. 1993. Using Different Examples of Natural Selection When Teaching Biology. *American Biology Teacher* 55(4): 241-244 (April).

Schopf, J.W. 1993. Microfossils of the Early Archean Apex Chert: New Evidence of the Antiquity of Life. *Science* 260: 640-646 (30 April). Did diverse cyanobacteria thrive just a billion years after the Earth's formation?

Shell, E.R. 1992. Waves of Creation. *Discover* 14(5): 54-61, May. Elizabeth Vrba's ideas about how climate influence speciation and species extinction.

Spaeth, Robert L. 1993. The Leaning Tower of Truth; Round up the Usual Subjects. *Commonweal* 26 March, pp. 6-7. "Review" of Catholic ruling on Gallileo.

Toumey, Christopher P. 1993. Praying with Creationists. *Soundings* 76(1):59-84. How an anthropologist gained acceptance by his "tribe," the scientific creationists, and respected them.

Vickers-Rich, Patricia, and Thomas Hewitt Rich. 1993. Aus-

tralia's Polar Dinosaurs. *Scientific American* 269(1): 50-55. Warm-blooded and smallish?

Vista Unified School District. 1993. Science Supplementary Book Review: Available from NCSE for \$.50 + SASE.

Wainright, P.O., G. Hinkle, M-L. Sogin and S.K. Stickel. 1993. Monophyletic Origins of the Metazoa: An Evolutionary Link with Fungi. *Science* 260: 340-342, 16 April. Molecular taxonomy suggests that animals and fungi are more closely related than animals and (most?) plants.

Exec Director Scott Elected to AAPA Office, BSCS Board

Eugenie Scott, NCSE Executive Director, has been elected to the Board of Directors of the Biological Sciences Study Committee (BSCS). BSCS initiated the revolution in biology textbooks via federally-sponsored integration of scientific experts and textbook writers in the early 1960s; it is widely credited with reintroducing evolution into the biology curriculum after fifty years of avoidance after the Scopes Trial in 1925. The 1950's closed with American panic about Sputnik and lackadaisical American science education, and BSCS was one of the "catch up with the Russians" responses. Since then, it has pioneered textbook reforms picked up by private publishers, emphasizing evolution, ecology, and genetics rather than "descriptive" biology in which students were simply asked to memorize parts of animals and plants.

Without an "Evil Empire" to outrace, BSCS faces a more home-grown challenge—the resistance

Weinberg, Steven. 1993. *Dreams of a Final Theory: The Search for the Fundamental Laws of Nature*. NY: Pantheon, 335 pp, \$25. Lucid account of action on the frontier of physics by a Nobel Laureate who thinks final answers are possible.

Weiner, Douglas R. 1993. Review of Todes, *Darwin without Malthus: The Struggle for Existence in Russian Evolutionary Thought* and Vucinich, *Darwin in Russian Thought*. *Isis* 84(1):124-127. Technical review of studies of a creationist bogey—Darwin and the Commies!



Ruse transcript available.



to evolution and critical thinking which is home-grown and can no longer be challenged in the name of an emergency defense against the Russkies. While BSCS has a different agenda than NCSE, it has the same opposition and some of the same goals.

Scott was also elected in 1993 to be Secretary/Treasurer of the American Association of Physical Anthropologists. At their April annual meeting (this year in Toronto), Genie was confirmed, joining the leadership team of this scholarly organization.

AAPA is the association of scholars concerned with human biology and evolution and how they relate to the study of human and other primate behavior, culture, demography, molecular biology, paleontology, nutrition, forensics, etc. Physical anthropology and biological anthropology tend to be interchangeable terms.



Keeping Tabs

Islam and Creationism

John Cole

Dr. T.O. Shanavas writes to report from his viewpoint as an Islamic creationist, that Darwin and Islam are compatible. Quoting Ibn Khaldun, the 14th Century (1332-1406) African philosopher (probably one of the few names of Islamic scholars familiar to Westerners—if any are):

One should look at the world of creation. It started out from minerals and progressed, in an ingenious, gradual manner to plants and animals. The last stage of minerals is connected with the first stage of plants, such as herbs, and seedless plants. The last stage of plants such as palms and vines, is connected with the first stage of animals, such as snails and shellfish which have only the power to touch. The word 'connection' with regard to these created things means that the last stage of each group is fully prepared to become the first stage of the next group.

The animal world then widens, its species become numerous, and, in a gradual process of creation, it finally leads to man, who is able to think and reflect. The higher stage of man is reached from the world of monkeys, in which both sagacity and perception are found, but which has not reached the stage of actual reflection and thinking. At this point we come to the first stage of man after (world of monkeys). This is as far as our

(physical) observation extends.

Khaldun, in context, was arguing for a "Great Chain of Being" idea, not a complete evolutionary theory.

Abu Bayhan al-Biruni (973-1048) wrote that:

The agriculturalist selects his corn [grain], letting grow as much as he requires, and tearing out the remainder. The

The last of the animals and the first of mankind is the monkey.



On they rolled to perfection: Thus the meaner world was born. Mineral passed to vegetable life, out of which animal life was born.

Ibn Arabi, 1165-1240

forester leaves those branches which he perceives to be excellent, whilst he cuts away all others. The bees kill those of their kind who only eat, but do not work in their beehive. *Nature proceeds in a similar way...*

All that we do, is to keep steadily in mind that each

organic being is striving to increase in a geometric ratio; that each at some period of its life, during some season of the year, during each generation or at intervals, has to struggle for life and suffer great destruction...

This predates Darwin's arguments for natural selection, using similar analogies, by centuries, although it was not carried through to a testable, naturalistic science. But while al-Biruni and other early scholars did not articulate a fully-developed, testable theory of evolution by natural selection, they anticipated it brilliantly and should give pause to latter-day Muslims who oppose evolution, adopting Christian apologetical arguments rather ahistorically. Willful ignorance of this intellectual tradition inhibited Western scholarship, fostered by the other world-shaking event of 1492—the expulsion of "Moors" from Spain and Europe (and Jews—many of whom fled the Inquisition to the protection of the Ottoman Empire and North African Islamic kingdoms offering refuge).

(Another correspondent writes that this sort of "Islamic apologetics" relies upon shopping around for quotations from early heretics in order to defend modern orthodoxy.)

A forthcoming issue of *C/E* will examine modern Islamic "scientific" creationism in Turkey.

(Quotations are from *Evolution and a Muslim Portrait of Creation*, a book manuscript © T.O. Shanavas; used by permission.) ❖

❖
Great
Chain of
Being
❖

Keeping Tabs

Floods Provide Once-in-a-Lifetime Opportunity

Eugenie C. Scott

We sympathize with members and friends in the Midwest as they cope with this summer's massive floods. We offer our best wishes for good weather and encouragement in the cleanup of the mess.

But it has been brought to our attention (all right, Bill Bennetta is to blame) that the weather has not been a totally unmitigated disaster: creationists have been given a once-in-a-lifetime opportunity to test their theories of Flood Geology! (Not to mention theories about the foci of God's wrath which some creationists have already addressed in the media (the Midwest isn't especially evil, but it's being punished because of support for gay rights and abortion on the coasts, according to Randall Terry, a national Religious Right leader interviewed on NPR's "Fresh Air").

Followers of the theory of "hydrodynamic sorting" should be flocking to Des Moines to determine whether the distribution of fossils in the geological column is mirrored by the deposition of drowned fauna, flora, and small appliances as *these* floodwaters recede. ("Hydrodynamic sorting" allegedly explains why trilobites and other marine forms are found below amphibians, reptiles, and mammals in the geologic column: spherical, round, smooth and streamlined shapes would naturally sink to the bottom first, to be followed by more odd-shaped organisms like tetrapods. Of course, hydrodynamic sorting doesn't explain why turtles and streamlined marine reptiles like plesiosaurs are found above amphibians, or why floating organisms are found all through the sequence, but hey—creationists are still researching this stuff.)

Flood geologists also have an opportunity to determine whether rates of sedimentation are truly as rapid as they claim. The Green River shales, for example, consist of over 5 million annual layers or "varves," laid down (according to those silly evolutionists) one layer at a time each year for over 5 million years. If creationists are correct, the Green river varves would have to have been laid down during the year that the Flood waters were receding; thus the rate of deposition would have had to have been at least one varve every six seconds. The midwest floods are a wonderful opportunity to test lots of creationist theories on catastrophic sedimentation. We can only trust that they are already at work, and that the results of this research will appear in creationist journals soon. Unless, of course, creationists don't really do research. ❖

❖
Were 10
layers or
varves
deposited
each
minute in
Des Moines?
❖

Colorado Springs To Host ICR?

Eugenie C. Scott

In the July, 1993 Institute for Creation Research publication *Acts and Facts*, Henry Morris related that Masterbooks, the ICR's publication wing, had moved from southern California to Colorado Springs, CO. According to the *Rocky Mountain News*, 40 evangelical ministries, including James Dobson's *Focus on the Family*, already make their home in this picturesque Colorado town, employing more than 2,200 people and generating a payroll estimated at \$45 million (*RMN*, 11/15/93:32).

Already ensconced in Colorado Springs is the former Students for Origins Research, now named Access Research Network. Is the ICR going to follow its publisher east? Leaving sinful southern California for the clear air and sympathetic atmosphere of 'Springs? Morris is praying for help with the decision, he writes. He also notes the ICR's California real estate investment. Colorado members, take note! (Thanks to Lara Attwood for *RMN* clipping.) ❖

Ban Science?

Westfield (MA) School Board Member and former Schools Superintendent, William Coscore, quoted in the *Springfield Union-News*, May 17th: "If I had my way, science would be thrown out of the curriculum. I don't know if I got a C in biology." He was arguing for new standards in order to reduce pressures on high school athletes.

Keeping Tabs

US Test Scores Down Again

John Cole

While people debate the meaning and accuracy of standardized tests,

Anthony Standen Dies

Science is a Sacred Cow was published forty years ago by chemist Anthony Standen, establishing his credentials as a skeptical critic of "scientism." Oft-reprinted, his book became a sort of bible of anti-scientists as well as skeptics. A longtime editor of major reference works, Standen was a scientist strongly interested in science education, bemused by his popularity among what he called the "know-nothings" but always disdainful of his scientific colleagues who claimed to know it *all*. He died this summer in his 80s after a long illness. I knew him only via long, delightful correspondence and phone calls. Ironically, his other popular book was about "Insect Invaders"—he treated bugs with more self-confident disdain than he could ever find among the scientists he loved to tease, viewing them (insects, that is) as worthy of nothing but eradication because he had scientifically come to that conclusion! I never thought to ask him if he had ever met Rachel Carson. . . . [JRC]

the 1993 news for the US is bad: Ten years after publication of "A Nation at Risk," a new study finds the US still in comparative trouble. In fact, the Associated Press reports that the US ranks in student science and math achievement behind a number of countries, led by Canada. Other countries's students scoring ahead of the US are: China, England, France, Israel, Korea, Russia, and Taiwan.

The Educational Testing Service report stresses that the different countries have different kinds of samples. Canadian statistics, for example are based on 9 out of 10 provinces rather than the US, Taiwan, France and Korea sample of all students rather than selected groups (Russian-speakers only, in Russia, for example). Nevertheless, the US ranking is clearly low in an absolute sense.

And the US trend is still downward in science and math, although Black, Hispanic and female students' scores on national assessment tests have improved, narrowing their gap from American white males.

SAT scores of US college-bound high school seniors have also declined. In 1969, math and verbal scores were 493/463; in 1992 they were 476/423. 800 is the best possible score in each category, but if I understand the system properly, 200 is a sort of minimum score. To put this in perspective, more students than ever are applying to colleges and taking SAT tests, so the downward score shift might be explained, at least in part, by the fact that more less-prepared students are taking the tests today.

Every science achievement test we know of shows US students, on average, falling more and more behind international averages. Arguments that the sample of US students tested are more likely to be marginally-prepared than the college-bound students in other countries where a college education is comparatively rare explain some of the data; that the tests are inaccurate could explain some of the results; however, the basic data more and more show that US science education produces fewer good students than it should, all things considered. ❖

US R&D Investment Lags

According to the National Science Board, reported in the *NY Times* in February, Research and development budgets for 1987 included the following details of interest, with projections into the 1993 percentages of national R&D budgets of selected countries:

	France	Germany	Japan	UK	US
Industry	10.6	15.3	4.6	8.7	0.2%
Environment	3.2	1.9	1.8	1.6	1.8%
Education	26.6	43.8	50.8	20.2	3.6%
Defense	34.1	12.5	4.5	50.3	66.6%

Keeping Tabs

Creation Research Society Gets Arizona Headquarters

Eugenie C. Scott

The Creation Research Society, publisher of the *Creation Research Society Quarterly*, announced in March, 1993, that it will build a creation "science" research station in Chino, AZ. The research facility, named the Van Andel Research Center, will contain several laboratories, shops and a library. Biologist John R. Meyer, formerly at Baptist Bible College in Clark's Summit, PA, will direct the center.

According to a newspaper article, the goals of the new center will be to study such topics as the "reevaluation of the geology and origin of the Grand Canyon, limits in the variation of plant and animal populations, reevaluation of the fossil record, and a complete study of geological dating procedures" (*Prescott Courier*, 4/5/93, p.3B). They anticipate that up to five full-time scientists will work there, and there will also be space for visiting members of the Creation Research Society. ❖

Gifts

You might want to consider gifts to NCSE as memorials or celebrations dedicated to others. When rich Uncle Don gets married and you don't know what to give him, why not either a gift to NCSE in his name or a membership? NCSE will acknowledge and thank him for your interest! Similarly, a gift to NCSE can be a worthwhile living memorial when someone dies, and we can acknowledge such a gift to whatever person you designate, if you wish us to do so. Contributions are tax deductible to the full extent allowed by law.

❖
CRS to
Arizona;
SOR to
Colorado,
and ICR,
too?

❖

Canadian Survey: Majority

A survey/poll of Canadian religious attitudes indicates that 53% of Canadian adults reject "the theory of scientific evolution." 32% "believe that the Bible is God's word, to be taken literally word for word."

The Religion Poll results come from a January-March telephone survey of a randomly selected sample of 4,510 Canadians over the age of 18; the statistical degree of confidence is plus or minus 1.5% at the 95% confidence level. ❖

These and other results are reported by the Canadian magazine *MacLean's*, 12 April 1993, pp. 32-37. The survey shows a higher degree of belief than in church attendance, and it shows much more active belief among conservative and pentecostal church members than among the more traditional Canadian churches—Anglicans, Roman Catholics, United Church, etc. 78% identify themselves as Christians, 1% as Jews. Almost 20% said they had no religion, and 9% of respondents agreed strongly that God is "just an old superstition."

Feminism and Evolution

Televangelist Jerry Falwell has explained yet another danger of evolution: teaching it leads to feminism, a horrible kind of thing which grows into all its ugly details by the rejection of the idea that man (Man?) was created first and dominant, then woman as his helper.

The ICR's Henry Morris has long written that every "ism" he dislikes stems from evolu-

tion—communism, fascism, feminism, environmentalism, humanism, atheism, one-worldism (*sic*). . . . Falwell's national appeal has been slightly broader in scope than the full-time creationists, combining religious and political conservatism.

(Thanks to Ranse Traxler, intrepid monitor of Falwell and other broadcasts.) ❖

Vista *con't from p. 1*

this book. . . . The book contains no opportunities to experiment with any topics. There are no activities, literature selections, math questions, discussion questions, etc.

List the potential positive aspects of introducing this book into the science curriculum. *The committee could find no positive aspects of introducing this book into the science curriculum. (Negative aspects) There are two arguments against the use of this book. First, the teacher and the student would need a broad scientific background, making the time needed to understand the book beyond the scope of a high school course. Second, the readability is too complex for a high school student.*

No sooner was this attempt to sneak creationism into the curriculum defeated, but the creation-supporters on the board

submitted a resolution that would allow a loophole for the teaching of creationism. At the May Board meeting, the following "proposed policy" was submitted by board president Diedre Holliday:

1. *No theory of science shall be taught dogmatically and no student shall be compelled to believe or accept any theory presented in the curricula.*
2. *To enhance positive scientific exploration and dialogue, weaknesses that substantially challenge theories in evolution should be presented.*
3. *Discussions of divine creation, ultimate purposes or ultimate causes (the why) shall be included at appropriate times in the history, social sciences, and/or English language arts curricula.*

Point 1 is extracted from the California science framework, and is a

largely harmless statement. During public discussion, it was pointed out that Point 2 singled evolution out for special treatment, and was therefore highly illegal, so Mrs. Holliday offered alternate wording *To enhance scientific exploration and dialogue, scientific evidence that challenges any theory in science should be presented.* The intent of the resolution, of course, is to single out evolution for special treatment. (See box, p. 8)

Statement 3 is also derived from the California Science Framework, and is intended to allow discussion about creationism or other religious ideas, for example, in comparative religion classes. It has been used as a loophole to *advocate* creation science (teach it as valid scholarship) in nonscience courses.

According to newspaper accounts, over 500 people showed up for the May 20 meeting, ("even though it meant skipping the final episode of 'Cheers.'") In a true turnabout from the usual situation, pro-evolutionists outnumbered the anti's approximately 3:1, according to NCSE member and local activist Larry Lovell. Lovell and other members of the citizen's group did a great job turning out a crowd.

Vista teachers also rallied, and reminded the board that there are procedures for curriculum changes, and that they jolly well better follow them and submit the resolution to a teacher committee. By the end of the meeting, the board had agreed, and sent the resolution to the curriculum committee.

Although teachers are technically on vacation, the Board demanded quick action on the resolution, and insisted the teacher committee respond this summer—a time when

Vista, cont'd on p. 23

More on Creationism in Eastern Europe

Russian educators desperately need creationist textbooks. Or so says the Roger Oakland Ministries of Santa Ana, CA, which reports that the Russian Department of Education, through its Deputy Minister of Education Dr. Alexander Asmolov, has asked for two million copies of the book *The Evidence for Creation*.

Roger Oakland is, of course, anxious to oblige, although he requests large donations from his followers to make this possible. He says he is in Moscow arranging the publication of

the first 250,000 copies as he writes (March 31st). A donation of \$30 is requested; that sum will place 200 of his books in "the hands of Russian teachers and students."

We have reported before on the creationist assault on schools in the former Soviet Bloc, so this should be no surprise. NCSE cannot begin to match the creationists' budgets, but small amounts of good science can be distributed in the hope of providing reference material for Russian scholars and teachers and politicians.

Letters

How Well Do We Make the Case?

I think you're doing a fine job with the newsletter and magazine. I like the little humorous touches that get in. And your tribute to Asimov (12(2)) was the best I've seen. . . .

I still have some reservations about C/E, perhaps because I misperceive whom it's meant for. If it's meant for those convinced that evolution occurred, then I suppose the goal is to provide us with ammunition. But even I, better informed than most, sometimes feel baffled by the technical stuff, and I think footnotes are a distraction, definitely off-putting.

The real point, and I'd like to see much more stress on this long-range goal of NCSE, is that creation "science" is not science at all. "Debates" are exercises in futility, lending spurious credi-

bility to creationist "science." And another point is that taking the Bible literally is only one way of reading (or misreading) it. I made this point when I spoke a while ago in Dubuque, IA, quoting Shakespeare and *Job* and other poetry and demonstrating how much they lose if they are simply understood literally.

Betty McCollister
Iowa City, IA

Re: C/E: *The audience is mixed; the goal is to provide more detailed (and "footnoted") information for people who need it, but we want it to be readable. I urge contributors to convert from academic jargon mode to English, and I copyedit to accomplish this goal but apparently do not always succeed! I also hear complaints that the journal is too "populariz-*

ing" and nontechnical but aim to err in the opposite direction. Footnotes and documentation can be important but should not be off-putting. Part of the problem is that NCSE really does try to address multiple audiences at the same time and cannot afford to set up different "tracks!" Every academic writer should perhaps be forced to spend a little time as a newspaper or magazine intern or reporter in order to qualify for a Ph.D., but in the interim those of us who have this dual experience try to act as intermediaries and translators, cheering on people from either side of the potential divide when they try to communicate with each other.

Life Line?

Your publications are a lifeline for me, teaching in a rural town where absolutely no

one shares my view that evolution makes great good sense. When people sometimes get restive about the matter, I can simply refer them to NCSE articles and say, "It's not just MY opinion. . . ." The opposition is constant but not intense, and you help defuse potential problems.

(Name and address withheld)

Just wanted to express my admiration for your fine work. I especially enjoyed the extensive critique of Phillip Johnson's *Darwin on Trial* by Eugenie Scott and Thomas Sager in C/E 31. Enclosed is a copy of a letter I sent to CBS after viewing "The Incredible Discovery of Noah's Ark." I have not yet received a reply [mid-April].

Theodore R. Treadwell
Allston, MA

Vista *con't from p. 22*

fewer parents and teachers are likely to attend the Board meetings. At the August 12 board meeting, the Board modified paragraph C to read *Discussions of divine creation, ultimate purposes, or ultimate causes (the "why") are included [rather than "shall be included"] at appropriate times in the history-social sciences and/or English-language arts curricula.*

Teachers union representative (and science teacher) Tom Conry downplayed the significance of the resolution. He told NCSE that he doesn't think that

any changes in the curriculum will need to be made, and that "teachers can just continue teaching what they have before."

But there is a proverb about not letting the nose of the camel into the tent because soon you have the head of the camel, the forequarters, and before long, the whole camel in your tent, and you are outside. The Vista resolution is the camel's nose of creationism.

California teachers are required to teach prehistory in sixth grade; some call it "the

caveman unit." Standard textbook archaeology and paleoanthropology are now to be "supplemented" with creation "science" (or even Biblical creationism) by some teachers, using the history and social science curriculum as a loophole. How much easier will it be for Vista teachers with this inclination to promote creationism with a school board-mandated resolution cheering them on!

The Vista resolution is also a green light for parents who object to teaching evolution to pressure teachers to *not* teach it, or to give "equal time" to crea-

tionism. This already occurs in California and elsewhere, and the Vista resolution will doubtless encourage the practice.

Citizens in Vista will keep tabs on the situation to determine what, exactly, is being taught under the resolution, and we'll keep you posted. NCSE members in other parts of the country can monitor their school districts to ensure that Vista-like resolutions do not metastasize. Keep us informed! ❖

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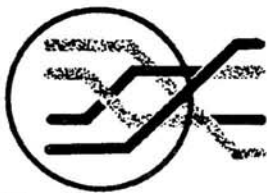
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Inside

2	Editor's Desk
6	News
10	Tracking Those Incredible Creationists
12	Resources
17	Keeping Tabs
19	NCSE News
22	Letters
❖	
3	Back-to-Genesis Seminar
4	California Prop 174
❖	

Eugenie C. Scott

Some hard work in Ohio seems to have headed off a pending school policy to require teaching "alternatives to evolution."

Louisville, OH had a curriculum guide in 1986 which required teachers to "contrast, compare and discuss alternatives to the evolutionary theory, particularly creationism." After the 1987 Supreme Court decision, *Edwards v Aguillard*, such wording became plainly illegal. In the early 1990's, the Board wrestled with how to word the curriculum guide to respond to community pressure to teach creationism but still stay within the law. The Board's legal firm advised it that because of the *Edwards* decision, they could not require the teaching of creationism, but *could* teach "alternative theories to evolution" (*Canton Repository*, 9/30/92, p. B4).

In 1991, the Board adopted a curriculum guide that stated in various places that teachers should "contrast, compare and discuss alternatives to evolutionary theory" in junior high, and in high school biology, "Develop an appreciation of

theories on evolution and it's (*sic*) alternatives," and the familiar, "contrast, compare and discuss alternatives to evolutionary theory." The goal here, of course, is to teach "scientific" creationism; as stated by Andy Aljancic, a pro-creationism citizen who frequently addresses the school board meetings, "creation, as far as I'm concerned, is the only alternative" (*Canton Repository*, 9/10/91). By eliminating the "c-word," Board members

seek to avoid legal entanglement.

In the fall of 1992, the Ohio ACLU requested that Louisville drop the "alternatives to evolutionary theory" wording in the curriculum guide. The district subsequently voted 3-2 to retain the wording. Local activist Andy Aljancic assured the district that the Ohio Rutherford Institute, a legal organization supporting religious right causes, would

Creationism, cont'd on p. 5

Creationism Trial Headed Off



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Have you seen *your* local school committee or curriculum lately? The next national debate may be very local: In the guise of promoting "parental control" or choice (which sounds fine), the Religious Right is diligently trying to privatize education and direct tax dollars towards "Christian" and often creationist education. This issue looks at California, Montana and Massachusetts examples.

People often tell me, "There's no problem HERE." Wrong (often).

I also hear the more cynical observation that anti-evolutionism will only affect kids who are not cut out to be scientists, anyway, or even that it will filter out a lot of students who might otherwise have gone to college but will now be directed into a somehow better educational and career path.

Sure, some good students will always figure out that anti-evolutionism is wrong, but what if they have to do this in a sort of secretive, pro-evolutionist cabal, presumably with secret hand signs? Won't a lot of good students be scared off? Is the ideal of universal education to be abandoned in favor of letting only the chosen few in on the "good stuff?" Doesn't this waste the huge potential of the major-

ity of students who might turn out to be scientists, after all? We probably agree. The question is, how do we get our friends to agree and to join in?

Well, surprise—The students taught bad science and anti-science become voters, school board members (I quoted one in our last issue who thought science should be eliminated from his school because it interfered with football), members of Congress, etc. An article in this issue on Carl Baugh, discredited "discoverer" of Paluxy Creek "Man tracks" in stone, cites Baugh's claim of support from ex-Vice President Dan Quayle and his wealthy father!

A huge number of people depend on us because they know we're "there," but others think the issue is just sort of amusing—"Why do you waste your energy trying to make rational arguments?" is a question I've been asked by a colleague who bemoans the frequent ignorance of her incoming college students. How does one respond to this?!

Whenever I hear "It can't happen here," I remember the old Sinclair Lewis novel by that name from the '30's and get a bit worried about friends who don't know history.

John Cole

How Does a Back-to-Genesis Seminar Affect Rural America?

David W. Baker

An ACLU lawyer recently met with the school administration in Stanford, Montana, concerning the apparent endorsement and promotion of a "Back-to-Genesis" seminar put on by the Institute for Creation Research in Great Falls on September 24-25, 1993. Stanford is a small farming and ranching community in central Montana with a population of about 600. Fundamentalist churches throughout the area urged their members to attend the seminar. In Stanford, Mrs. Diana Roen, chairman of the local school board, actively promoted the ICR seminar. As noted in the ACLU complaint, she called parents of elementary students to ask them to send their children to this "assembly for school children."

Krista Kochivar, a senior at Stanford High School, alerted the ACLU. She said the football coach had gone into classrooms handing out ICR's brochure during class time. A classmate informed Kochivar that they were going on a field trip to the "assembly" in Great Falls. When Kochivar appeared at the school board meeting to question the legality of the trip, according to Kochivar, chairman Diana Roen made a crude remark to the young woman to humiliate her in public.

Krista Kochivar deserves commendation for stating her case to the board. The school board nevertheless decided to allow the Calvary Church to rent school buses for a nominal fee to transport the stu-

dents and to allow students to use one of four "personal" days that each student is allotted each year. (The most frequent use of such personal days is on the first day of hunting season.)

According to Ken Ham, ICR seminar speaker, 57 students attended from Stanford. Elementary school students found out "What Really Happened to the Dinosaurs." They were told that dinosaurs are still alive today and that dinosaur and human footprints have been found together in the same rock outcrop [see C/E No. 15]. High school students were shown pictures of logs floating on Spirit Lake after the Mount St. Helens volcanic eruption and told how this "proved" that coal could form quickly—for example, in a really big flood. The presentations were classic pseudoscience.

On Saturday, September 25, a short article in the *Great Falls Tribune* noted the ACLU complaint. That afternoon Ken Ham asked a packed auditorium in the Great Falls Civic Center to pray for the "courageous Christians" who were being persecuted by the ACLU.

When I talked with four of the five Stanford school board members, the only one who refused to discuss the ICR seminar was chairman Diana Roen.

The next issue of the *Judith Basin Press*, the local weekly newspaper, published the full text of the ACLU complaint. Letters to the editor criticized the actions of Roen and called for her to resign. My own letter to the paper discussed the ex-

treme religious character of the seminar, noting that Ken Ham had preached intolerance, labelling the beliefs of mainstream churches as "the work of Satan," for example, and making nasty jokes and comments about "working" women and "feminazis."

An outraged rancher's wife sent me a letter telling me I have a "hard heart" if I was unconvinced by the seminar and that I should "mind my own business"—a clear indication that the "scientific" creationists do not like their machinations aired in public.

The next edition of the weekly brought a long tirade from Randy Triplett, the football coach and former elementary school teacher who had distributed the ICR brochures in classrooms. He quoted, among others, Henry Morris, Ken Ham, and Malcolm Muggridge to show "there are little or no facts to back the evolutionary theory."

Life moves pretty slowly in a small town, so people are used to creating their own amusement and excitement. The most revealing comment about small town life was overheard at the auto parts store. One man observed that the big arguments between factions of the community usually develop in the middle of winter. The current fuss just meant that "they are starting earlier this year." The ACLU complaint is on the agenda for November. Expect the biggest attendance of the year.

Dr. Baker, Montana CC Liaison, is a geologist at Conceptual Engineering, Great Falls, MT. ♦

♦
Ken Ham:
Mainstream
church
beliefs are
"the work of
Satan"
♦

California Prop 174—

**Molleen Matsumura
and John Cole**

A November ballot initiative in California could deal a severe blow to public schools and the teaching of evolution.

Proposition 174, called the "Parental Choice Initiative," would transfer funds directly from public school budgets to "voucher redeeming schools" which enroll K-12 students. The state of California pays each school about \$5,200 per student, based on average daily attendance (and ranks in the lowest 20% of states in per-student expenditure). Although a student using a voucher would receive approximately \$2,600, education would lose the full \$5,200 because the state would return the remaining \$2,600 to the general budget *not* to the education fund. Each student transferring from a public school to a private one, therefore, would "cost" education dearly. Worse, there is already a large number of students in private schools whose parents would doubtless apply for vouchers, thus immediately reducing the amount in the already strapped education budget.

Each voucher would initially amount to a bit over \$2600—not enough to pay the costs of most private schools lacking church subsidies. This would be a lucrative windfall for families with students already enrolled in private schools, however, and it would undoubtedly attract additional students to religious schools.

Although Prop 174 would allow discrimination in admissions

based on gender, handicap or disability, religion, sexual preference, and other criteria, racial or ethnic discrimination would be barred. In addition, students could be expelled if they were deemed by the school to not be adequately benefitting from the school. Public schools would be left with all such "difficult students" and "rejects"—with drastically-reduced budgets. (A "special needs" student can easily cost a school \$15,000 or more per year, for example, and would be an unlikely recruit for a voucher-redeeming school.)

Already, 75% of California private schools are sectarian. The figure is 85% in New York and approaches 100% in states without a prep school tradition. Voucher education would be religious education, for most students and in most states—often by denominations that reject evolution.

California school budgets have been slashed already in the wake of the tax-capping Proposition 13; Prop 174 would turn over \$1.6 billion dollars immediately to students already in private schools, devastating an already cash-crippled system. The effect is less clear when projected to cover students who might now transfer out of public schools—a number no one agrees upon. No doubt some transfers would occur, but the \$2600 subsidy would not pay full costs at most private schools, dimming the promise of "school choice for all" Prop 174 advocates extol.

The law would prohibit any state regulation of private school curricula unless the regulation were passed by 75% of the state legis-

lature—well-nigh impossible. Private schools are known for idiosyncratic curricula (see Menendez: *Visions of Reality: What Fundamentalist Schools Teach*), where evolution is not guaranteed a place in a student's science education. The *Oakland Tribune* (24 Oct) profiled several private schools which would be eligible for vouchers. "The difference is we try to integrate Biblical principles in the lessons," said the Fremont Christian School superintendent. "We teach evolution, but as a theory, so our kids won't be culturally ignorant. We teach creationism as a fact. I think public school kids are being deprived because they aren't being exposed to both views."

As more students pass from public schools where the curriculum is shaped by a series of subject-based guidelines (such as the California Science Framework), fewer and fewer of them will be exposed to evolution as a fundamental principle of science. The slow progress NCSE has helped forge on the textbook front could be seriously damaged, with nationwide ramifications.

It is no coincidence that Prop 174 appears on the ballot just a few years after California's adoption of a social studies framework that requires teaching about the roles of *many* religions, and a science framework mandating the teaching of evolutionary biology.

NCSE's efforts to keep evolution in the classroom has necessarily been directed at *public school* classrooms. It's a struggle, but it's a struggle which can be won. But if Prop 174 passes, and other

❖
"We teach evolution, but as a theory, so our kids won't be culturally ignorant. We teach creationism as a fact."
❖

Vouchers for Religious Schools

states predictably follow suit, educational standards could be devastated. Chicago's Democratic mayor Richard Daley has endorsed a similar plan this Fall, and leading Massachusetts politicians in both parties have endorsed a parochial constitutional amendment.

The California Teachers Association and others are waging a strong and expensive campaign against the ballot initiative, and it

has become a well-financed nationwide rallying point for religious right and other conservatives, as well. For example, columnist George Will has written that Prop 174 offers America the chance to strike a blow against socialism—the socialistic idea of public schools. California Governor Pete Wilson, initially neutral or even mildly supportive of the initiative (he placed it on the Fall ballot earlier than required), came out against

the plan October 5th, a day after President Clinton had denounced it. Wilson and other Republicans worry about its financial implications to cash-strapped state and local budgets. Win or lose, this is the opening battle of a longer struggle over educational standards.

Matsumura is a writer and editor who currently heads the NCSE Network/Committees of Correspondence Project.

❖
“Creation, as far as I’m concerned, is the only alternative.”

—Ohio creationist

Creationism *con't from p.1*

defend the district *pro bono* if a lawsuit were filed. (The Rutherford Institute was originally involved in the lawsuit *Peloza v. San Juan Capistrano*, but eventually withdrew after a dispute with Peloza's lawyer over legal strategy.)

In August, 1993, the school district, under threat of a suit from the ACLU, voted to suspend its policy. The Ohio State Department of Education is currently reviewing and revising the state curriculum, and the Louisville district has decided to hold up its policy until the state science curriculum is released.

Ohio NCSE members might want to make some inquiries to insure that the process includes safeguards for the teaching of evolution, and that the final curriculum is specific about the definition of science as excluding supernaturally-based explanations such as special creation. ❖

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Dan Quayle on Noah's Ark?

Bret A. Corum

Thanks to Dan Quayle, Rev. Carl Baugh says he has an exclusive 49 year lease from the Turkish government to conduct excavations on Mount Ararat in search of Noah's Ark. His group plans to excavate Ahora Gorge, an alleged Ark site, and a monastery, buried by volcanic activity, that supposedly housed artifacts from the Ark. The agreement calls for him to build a medical facility for the local people nearby. He plans to build a 3-story museum modelled after the Ark at the base of Mt. Ararat. His crew will drag down pieces of the Ark for display at the museum, and the top floor will be outfitted with telescopes so visitors can look at the Ark *in situ* on the mountainside. They intend to use high-powered lasers to keep the excavated Ark free of ice.

He claims that the agreement was routed to the Turkish Embassy in the US through the auspices of Vice President Dan Quayle's office. Baugh implies that this was done while Quayle was still in office but handled unofficially. He also says that the Vice President's father, Jim Quayle, is an honorary member of the inner circle (or some designation to that effect) of Baugh's team working on the Ark project.

I heard Baugh speak last spring at the First Independent Church of Grand Prairie, Texas—a Dallas suburb. This was soon after his appearance as an expert on the discredited CBS TV "Noah's Ark" show (see *Reports* 13(1), 13(2)).

Until now, Baugh has been better-known as the increasingly lonely proponent of human and dinosaur footprints being found together along Paluxy Creek near Glen Rose, TX (see *C/E* 15, etc.). He continues to tout these claims which have been investigated by scientists including three NCSE Board Members, Ronnie Hastings, Laurie Godfrey and John Cole, other experts such as Glen Kuban—and thoroughly-enough debunked that John Morris of the ICR withdrew his popular book, *Tracking Those Incredible Dinosaurs...and the People Who Knew Them* (or so ICR claimed; the book apparently remained available for some time, however).

Baugh also continues to pitch his ferromagnetic, fiber optic (and virtually every other mutually exclusive characteristics you can imagine) ice shell encasing the Earth to protect the rest of the

Universe from Earth's harmful effects. I refer to this as the "Bozone Layer," quoting Gary Larson's Far Side cartoon layer of clowns circling the Earth. Baugh details his crackpot "theory" in *Panorama of Creation*, which he'd be happy to sell you. In it he claims that NASA discovered that digitized symphonic music, in a major key, is being beamed to the Earth from the stars. Of course, he fails to cite a NASA document to back up his case—or rather to indicate whatever he might be misunderstanding.

The Glen Rose Ark Museum hosted its second annual Creationism Fair in June; after ten years or more, Baugh's "museum" consists of one end of a mobile home. The Turkish government should visit it.

Mr. Corum is an NCSE member in Fort Worth, Texas.

Willaim F. Buckley Special on Religious Right

A special two-hour edition of William F. Buckley's *Firing Line* on PBS (September 17, 1993) debated the proposition: "Resolved: There Is No Danger from the Religious Right." Among the various panelists were televangelist Pat Robertson, an ACLU leader, and a rabbi supporting the Christian Coalition's "family values" theme. Creationism came up a few times, but most of the attention was devoted to tax aid to religious schools, abortion and AIDS education. Buckley shrugged off

the advocacy of creationism in schools as a minor irrelevancy, looking slightly embarrassed.

The fireworks were fairly dull as RR leaders often downplayed their demands ("Aw, shucks...") when past comments were quoted by the liberals. From an NCSE viewpoint, the interesting part was simply that creationism was clearly being treated as part of a package and that mainstream conservatives such as Buckley did not pounce on this as "dangerous."

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ferromagnetic
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News

Massachusetts "Family Values" Debate Widens

John Cole

A Massachusetts battle is shaping up over teaching "family values" in public schools. Across the state, local groups are rallying to change curricula which they say offend religious and family values. Some of the "family issues" cited in news reports include sex education and AIDS awareness, "multiculturalism," disrespect for capitalism, and bans on Judaeo-Christian teachings in schools.

"I've come to the conclusion that God never meant us to separate church and government," says David Floyd of Framingham, MA, at a recent Christian Coalition "Leadership Training School" in Weymouth (*Boston Sunday Globe* 10/17/1993, p. 37).

Local critics of public schools have so far not usually been quoted as advocating teaching creationism. However, they cite as their models the examples of Vista, CA and other places where creationism has been hot on the heels of "stealth candidates" pushed by the Christian Coalition on a "family values" campaign.

The Boston Globe and *Daily Hampshire Gazette* featured major stories on the phenomenon August 27th, just a week after a National Public Radio broadcast on the "family values" movement in Vista. NPR interviews with creationists made it clear that they were using "values" as their latest code word.

The October 10th *Boston Sunday Globe* carried a front page story

on the local movement. Nancy Sutton of Medford, founder of the 3-year-old Family First Inc., says "This is a national thing. It is not just Massachusetts. . . . Parents can no longer trust the schools to educate their children appropriately." She made clear in her interview that she and other groups had a more sweeping agenda than the currently hot topic of sex education: restoration of "prayer to public schools, teaching creationism over evolution, ending abortion, stopping — 'special rights' for gays, and supporting home schooling and church-based education," to quote *Globe* reporters Laura Papano and Amy Sessler.

Sutton was long a state leader of Concerned Women of America, the national group founded by Beverly and Tim LaHaye. (Mr. LaHaye was co-founder of Heritage College and the associated Institute for Creation Research and its Graduate School.)

Homer Allen, editor of *The Standard of New England* and founder of the Pilgrim Family Institute (an affiliate of the Focus on the Family ministry), says in the same article, "Conservatives are starting to realize it's time to say, 'Enough is enough.'"

The Massachusetts debate is especially significant because it comes at the beginning of a year of state-wide education reform in which new parent and community committees will be given powerful new control over school curricula. School boards, superintendents and principals will relinquish much of

their power to these yet-to-be-formed parent committees. In addition, state law has abolished teacher tenure and now also gives school committees greater leeway to dismiss teachers regardless of seniority. Teacher unions are nervous about both job security and curriculum integrity but have been supportive of the need for change. [See related story on p. 9]

Democratic Senate President William Bulger has long pushed for a constitutional amendment to allow state support of religious schools. On November 2, Pittsfield voters are expected to pass a referendum calling for a voucher system to transfer the amount spent on public schooling for each child to the parochial school of parents' choice.

Tremendous discontent with crumbling systems lead many people to focus on schools as the prime cause of most social problems. As a handy scapegoat, schools are fought over by various factions. As one organizer put it at a meeting I attended, "No matter how different they are, there's one group every American hates until the day he dies, and that's teachers."

Vista School Board Rejects State Money

National Public Radio reported in August that the Vista, CA school board, recently taken over by "family values" and creationism advocates (see *Reports* 13(1), 13(2)), has voted to reject a \$400,000 social service grant from the state. The programs of subsidized school lunches, inoculation programs, etc. were deemed to be an interference with parental rights, even though participation was voluntary.

❖
"No matter how different they are, there's one group every American hates until the day he dies, and that's teachers."
❖

Israeli Right Attacks *Jurassic Park*

Some ultra-orthodox rabbis object to the popularity of the *Jurassic Park* movie in Israel—and to the popularity of dinosaurs, in general. Dinomania is contrary to Scripture, they say. According to the *New York Times* (4 August 1993), the agency which certifies food as kosher has been asked to decertify Tera Dairy, a company which uses pictures of dinosaurs in its advertising campaign.

"It's inconceivable that we should give our seal of approval to a product" endorsing heresy, said a spokesman for the Agudath Israel Party. "The dinosaur is presented in encyclopedias as an animal that is millions of years old, despite the fact that the world was created only 5,753 years ago."

The dairy said it would take this view under advisement, as did film distributors and the Jerusalem Mall theatres.

CBS Anchorman Dan Rather on Noah's Ark

John Cole

Speaking at the national meeting of the Radio and Television News Directors Association in Miami on September 28th, CBS's Dan Rather criticized what he saw as a tendency towards "powder puff, not probing interviews." Too much of TV news was going for sensational pictures at the expense of detail and depth, the *New York Times* (10/1/93) reported. "We all should be ashamed of what we have and have not done measured against what we could do."

Rather also criticized TV executives for blurring the distinction between news and entertainment. They "freely take an hour that might have been used for a documentary and hand it over to a quote-unquote 'entertainment special' about the discovery of Noah's Ark that turns out to be a 100 percent hoax" (emphasis added). Readers will recognize a barely veiled reference to CBS Television's broadcast of pseudo-documentaries produced jointly with Sun International (Reports 13(1); 13(2), etc.).

The *Times* implied that Rather's barb was directed towards a forthcoming series, however. Perhaps the critique applies to this future broadcast, as well: It seems CBS will be broadcasting a full hour television version of the supermarket tabloid, *Weekly World News*. One of the program's segments is reported to deal with the discovery of Noah's Ark.

Did CBS learn from its recent archaeological fiasco? Not much, it seems, although perhaps by scheduling the topic in a self-announced sideshow atmosphere they will claim that this time it's clearer that "it's all in fun."

Media critics generally applauded Rather's comments, and some speculated about whether his speech was a sort of farewell address. Not so, he replied. However, the parallel between his comments and those of Edward J. Murrow, his venerated CBS predecessor, are striking; Murrow said much the same thing at a broadcasters' convention just before leaving the network 30-odd years ago. ♦

Supercollision

In the wake of Congressional defeat of the US Superconducting Supercollider, there are serious issues about support for "big science" versus "little science" and similar intellectual issues. There are also other thoughts.

"If we find more basic building blocks of the Universe, it's not going to change the way people live," said Rep. Martin R. Hoke (R-OH).

"It's not something I stayed up at night reading about," said Rep. Ernest J. Istook Jr. (D-OK).

Twenty five years ago, 5.2% of the federal budget was devoted to nonmilitary scientific research; last year the figure was 1.8%.

(SOURCE: *New York Times* 10/26/1993.) ♦

Computer Bulletin Board Phone Number

To call the NCSE-FREENET computer bulletin board use the number:
(216) 368-3888

The BBS is accessible via other network systems such as Internet, Usenet, etc.

❖
"If we find more basic building blocks of the Universe, it's not going to change the way people live."
❖

News

California Poll Shows Creationism Support, Strong Religious Right

Eugenie C. Scott

A Field Institute poll published in September, 1993 shows 45% of Californians are in favor of teaching both evolution and the biblical version of creation in public schools. A comparatively high 44% supports the teaching only of evolution, while only 7% favor teaching only creationism. Forty-eight percent of Californians favor a constitutional amendment permitting prayer in public schools.

The sample was broken down by religious and political preference for further analysis. "Religious" Californians were those who were "born again" or who answered "yes" when asked whether religion was "very important" in their lives. "Religious" individuals could be either "Religious Right" or "Religious Moderates," depending on their political self-definition: liberal, conservative, or middle-of-the-road. Individuals who classified themselves as politically liberal included both non-religious as well as religious individuals. This rather amorphous group was termed "Secularists," and contrasted with the Religious Right and Religious Moderates.

Needless to say, attitudes about teaching evolution vs. Biblical creation varied considerably among these groups, which was favored by 60% of the Religious Right group, 56% of the Religious Moderates, and only 33% of the Secularists. Secularists preferred only evolution be taught

by 61% to 16% (Religious Right) and 33% (Religious Moderates).

In California as a whole, the Religious Right category comprises one-fifth (21%) of the population, while Religious Moderates compose 25% and Secularists 54%. (Recall that Secularists include liberals of

all religious persuasions.) Although composing only a small portion of the electorate, if the Religious Right votes as a block and at high percentages, as it often does, it can be very influential in elections when there is a small turnout—such as school board elections. ♦

Gallup Reports High Level of Belief in Creationism

Eugenie C. Scott

In a June 1993 survey, results of which were released in September, Gallup surveyed a national sample of adults, asking the same questions it has asked in 1982 and 1991.

Belief in a literal creation was ascertained by agreement with the statement, "God created humankind in its present form about 10,000 years ago." A more theistic evolutionist perspective was reflected in answers to "Humans have evolved over millions of years from less-advanced forms of life, but God guided this process."

Finally, Gallup asked "Humankind has developed over millions of years from less advanced forms of life. God had no part in this process." Results are below.

Percentages of belief in a literal Biblical creation (including special creation of humans and a young earth) has held steady over the last two years. The number of theistic evolutionists appears to have dropped slightly, and there may be a slight increase in those holding to a purely naturalistic view (though the margin of error is +/- 5%).

NCSE reported on a recent Gallup poll of teenagers (Reports 13(2):11) showing that 52% answered positively to the theistic evolutionist question, considerably more frequently than that of adults. Ten percent, essentially identical to the adult 11%, agreed with the purely naturalistic evolution question. The Biblical literalist creation question was not directly asked, but answers to a similar question suggested that 45% of teens 13-15 believe that the whole Bible is literally true.

♦
Poll: 47% in U.S. support literal creation.
♦

	1982	1991	1993
Literal Creation	44	47	47
Guided (theistic) Evolution	38	40	35
Purely Naturalistic Evolution	9	9	11
No Opinion	9	4	7

Tracking Those

The Myth of the Geological Overthrust Myth

David Baker
Montana CC Liaison

For the last 80 years Montana geology, especially Glacier National Park, has been a cornerstone of creationist arguments against the long geological history of the Earth. As layer after layer of sediments were deposited over geologic time, the plants and animals buried in them changed so much that geologists use their fossilized remains to determine the age of rocks. Stratigraphy is a basic principle of geology—younger fossils are above, older rocks and their fossils below.

However, in Glacier National Park, the Great Lewis thrust fault (named after the explorer, Captain Meriwether Lewis) placed older rocks on top of younger rocks long after deposition ceased. The most famous locality is the well-known landmark, Chief Mountain, which rises abruptly above the gentle slopes below, on the east side of the park.

The Lewis thrust and parallel faults are responsible for the Rocky Mountain Front, a topographic boundary between mountains and plains extending from Augusta to Alberta. Movement along the thrust fault caused deeply buried 1.6 billion year old rocks to be transported horizontally a minimum of 30 miles to the northeast and to be raised vertically more than a mile so that they now rest atop soft shales only 100 million years old.

However, according to the 25 creationist books written by George McCready Price during the first

half of this century and the many "scientific" creationist books and articles based on his writings since the 1950s, the Lewis thrust fault does not exist. Price made his "discovery" without benefit of fieldwork. He concluded that published interpretations by the many geologists who had worked on the fault were all wrong because there are places where the beds above and below the fault appear parallel, es-

pecially when viewed from a distance. Since the fault does not exist, according to Price and his followers, it is the fossils rather than the beds that are out of order. He argued that this prohibits one from using the fossils for determining the age of rocks and that one is justified in discarding all geological history and substituting the account of the Great Flood of Noah.

Creationism in the Ukraine

Grigory A. Naumovets

The situation in Ukraine and Russia with respect to science education and the evolution/creationism issue is quite different from that in the US and Canada. So far, the influence of "scientific" creationists is weaker here. However, I think that the NCSE activities are by no means irrelevant for us.

Under the Communist regime, no religious propaganda was allowed in public schools (and all schools were public), while "Scientific Communism" and "Scientific Atheism" courses were compulsory. Both Communist and Darwinist doctrines were beyond any doubt; any non-Marxist philosophical doctrines were more scoffed at than seriously criticized—they all were labelled wrong just for the simple reason that they were "bourgeois" and "reactionary." Now, many people here think that Marxist doctrine is wrong just for the simple reason that "it has lead us to the poor state we are presently in." Some kind of "religious revival" is taking place here, but I don't think "scientific crea-

tionism" is likely to be introduced into Ukrainian public school curricula in the near future. However, I'm afraid that evolution is not understood well by most people here. Recently I saw on a non-state television channel an American film promoting "scientific" creationism, and I think that many teachers here are unprepared for such a level of argument—they are simply unused to the fact that evolution may be seriously questioned (especially in its vulgarized and simplified form taught in our schools).

Therefore, NCSE activities are quite important for the ex-USSR countries. I would be happy to become a member. Unfortunately, for the time being, I cannot afford it because of the grave state of the Ukrainian economy and exchange rates which make our salaries look like nothing when changed to outside currency. But let me stress once again that I support NCSE and its activities. ♦

Institute of Semiconductor Physics, Academy of Sciences of the Ukraine, Prospekt Nauki 45, 252650 Kiev-28, Ukraine

Incredible Creationists

Of course, the Lewis thrust *does* exist.

Most of the rock formations above and below the thrust fault were deposited as mud in a sea bed. Because pressure and temperature increase with depth of burial, deeply buried mud is compacted and "cooked." You can easily see the soft shales below the thrust fault exposed along U.S. Highway 2 between East Glacier and Marias Pass. They crumble in your hand. However, just try using your bare hands to break the green or red metamorphosed shale (argillite) above the thrust fault—for example, along the Going-to-the-Sun Highway. The Lewis thrust moved highly compacted "cooked" rocks on top of weakly compacted, "uncooked" rocks.

Fossils, radiometric age dates, burial depth and small-scale structures all document this great structure. Cores from many oil wells, drilled through the Lewis thrust, have shown its extent and three-dimensional shape.

With his claims that volcanoes were caused by burning buried coal beds and that glaciers never covered Canada and the northern US, Price was dismissed by scientists as a religious fanatic lacking scientific training, both in his time and ours.

Thus it is amazing to see how many of his unscientific ideas continue (usually without giving him credit) to serve as the basis of contemporary creationist attempts to compress 4.6 billion years into the few thousand years

creationists claim are allotted by *Genesis*. It is encouraging to see that at least two younger creationists, Steven Austin of the Institute for Creation Research, and Kurt Wise of Bryan College, Dayton, TN, have recognized the absurdity of Price's widely-used claims concerning Glacier Park. They acknowledge publicly that the Lewis thrust does indeed exist.

This is not a scientific dispute. It might be noted that Chief Mountain is now closed to tourists because of their interference with Blackfeet religious ceremonies there. Why doesn't the widespread demand for "equal time" include equal time for Blackfeet and other Native American creation accounts? ♦

♦
"glaciers never covered Canada and the northern US," said Price

Privatize All Massachusetts Schools?

John Cole

GOP Governor William Weld has floated a startling proposal. An October 4th AP story says he is considering turning over the operation of Massachusetts schools—or at least the large state portion of funding—to the private Edison Project, a for-profit company set up by Chris Whittle in 1991 to run high-tech schools like a national private franchise network. (No schools have been set up anywhere, so far.)

Weld, widely considered a presidential hopeful, has been an adamant advocate of privatization of public services. The state Education Commissioner Robert Antonucci said that Weld had decided to endorse the Edison plan in late September.

Some Edison plans sound attractive to many educators: Classrooms would be open 12 hours daily, with instruction from 8 A.M. to 4 P.M.; summer vacations of six weeks instead of the typical 9-12 weeks; students would enter at age 3 rather than 5 or 6. However, aside from philosophical objections to abandoning public schools to make students into commodities, critics point to the fact that what remained of public schools would be left with all of the students with problems and virtually no budgets. Many critics claim that public schools need to be rebuilt from scratch but are nervous about doing it for profit.

Whittle already operates "Channel One," the controversial daily television news show seen by 8 million students—in about 17% of the country's wealthiest high schools but 38% of poor and/or

minority schools (UPI 10/17/1993). Each 10 minute show includes 2 minutes of commercials grossing about \$630,000 per day for Whittle Communications; schools get the equipment free but have to guarantee that students watch the show each day. Channel One has been barred from all New York schools and many in California because of the captive commercial audience aspect. (In addition, some research shows that students learn much from the program about advertised products but do not seem to learn much more than control groups about current events, as a recent *60 Minutes* broadcast suggested.) The *Wall Street Journal* has referred to the Edison Project as "an expanded outlet" for advertisers (*Daily Hampshire Gazette* 10/16/1993). ♦

Resources

Books

	LIST	MEMBERS		LIST	MEMBERS
Berra, <i>Evolution and the Myth of Creationism</i>	8.95	7.00	McGowan, <i>In the Beginning... A Scientist Shows Why the Creationists Are Wrong</i>	18.95	15.25
Bowler, <i>The Non-Darwinian Revolution</i>	12.95	10.35	McIver, <i>Anti-Evolution, An Annotated Bibliography</i>	15.95	12.75
Cartmill, <i>A View to a Death in the Morning</i>	*29.95	23.95	McKown, <i>The Mythmaker's Magic</i>	*23.95	19.15
Clark, <i>Evolution and Cultural Literacy</i>	7.00	5.60	Montagu, <i>Science and Creationism</i>	16.95	13.55
Dalrymple, <i>The Age of the Earth</i>	*55.00	44.00	NEW Moore, <i>Science as a Way of Knowing: The Foundations of Modern Biology</i>	29.95	23.95
Dawkins, <i>The Blind Watchmaker</i>	10.95	8.75	Newell, <i>Creation and Evolution: Myth or Reality?</i>	12.95	10.35
NEW Deford, <i>A Reparation: Universal Gravitation a Universal Fake</i>	6.00	4.80	Numbers, <i>The Creationists</i>	*27.00	21.50
Diamond, <i>The Third Chimpanzee</i>	12.00	9.50	Raup, <i>Extinction: Bad Genes or Bad Luck?</i>	*19.95	15.95
Dietz & Holden, <i>Creation/Evolution Satiricon</i>	12.95	10.25	Robinson & Tiger, eds. <i>Man and Beast Revisited</i>	16.95	13.55
Desmond & Moore, <i>Darwin. The Life of a Tormented Evolutionist</i>	*34.00	27.25	Ruse, <i>But is it Science?</i>	*28.75	23.25
Ecker, <i>Evolutionary Tales</i>	10.00	8.00	Sagan & Druyan, <i>Shadows of Forgotten Ancestors</i>	*23.00	18.00
Eldredge, <i>The Miner's Canary</i>	20.00	16.00	Strahler, <i>Science and Earth History, the Evolution/Creation Controversy</i>	*47.95	38.55
Eve and Harrold, <i>The Creationist Movement in Modern America</i>	11.95	9.55	Strahler, <i>Understanding Science</i>	*25.95	20.75
Godfrey, <i>Scientists Confront Creationism</i>	10.95	9.50	Van Till, Young, & Menninga, <i>Science Held Hostage</i>	10.99	8.75
Gould, <i>Bully for Brontosaurus</i>	10.95	8.75	Williams, <i>Natural Selection</i>	24.95	19.90
Gould, <i>Ever Since Darwin; The Panda's Thumb</i> (2 bks)	9.95	7.99	Wilson, <i>The Diversity of Life</i>	*29.95	23.95
Gould, <i>Hen's Teeth and Horse's Toes</i>	6.95	5.55			
Gould, <i>Flamingo's Smile; Wonderful Life</i> (2 bks)	10.95	8.75			
Harrold & Eve, <i>Cult Archaeology and Creationism</i>	*24.95	19.95			
Howells, <i>Getting Here</i>	19.95	15.95			
Hughes, <i>Reviews of Creationist Books</i>	10.00	8.00			
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>	19.95	15.95			
Maynard Smith, <i>Did Darwin Get it Right?</i>	*25.00	20.00			
Mayr, <i>One Long Argument: Charles Darwin and the Genesis of Evolutionary Thought</i>	10.95	8.75			
McCollister, ed., <i>Voices for Evolution</i>	10.00	8.00			
McGowan, <i>Dinosaurs, Spitfires and Sea Dragons</i>	14.95	12.00			

Kids Books

Barker, <i>Maybe Yes, Maybe No</i>	11.95	9.55
NEW Cole, <i>Evolution</i>	4.50	3.60
Peters, <i>From the Beginning. The Story of Human Evolution</i>	14.95	11.95
Stein, <i>The Evolution Book</i>	12.95	10.35
Stein, <i>The Science Book</i>	9.95	7.95

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see page 14

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Manuscripts

Sonleitner, <i>What's Wrong With Pandas?</i>	10.00
Wakefield, <i>Biological Evolution? An Overview</i>	15.00

Audio Cassettes

Symposia

1987 Annual Meeting, Full Symposium	2 tapes	10.00
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1989 Annual Meeting, Full Symposium	2 tapes	10.00
<u>NEW</u> 1993 Annual Meeting, Full Symposium		
"The New Antievolutionism" with papers by Miller, Ruse, Scott, Van Till, Marks and Godfrey, and Thwaites	3 tapes	15.00
1982 AAAS Pacific Division Symposium		
"Evolutionists Confront Creationists" with papers by Patterson, Dalrymple, Craycraft, Sarich, and Thwaites	6 tapes	30.00
1988 AAAS Pacific Division Symposium		
"Communicating Evolution to the Public" with presentations by Scott, Moore, Skoog, Dalrymple, Beard, and Petit.	3 tapes	15.00

Debates

1977 Awbrey/Thwaites/Morris/Gish	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

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1976 K. Mather, <i>The Scopes Trial</i>	1 tape	4.00
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Resources

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To order see
pp. 12-13

Science as a Way of Knowing, the Foundations of Modern Biology

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David Peters

Lavishly illustrated book suitable for middle school through junior high. Good diagrams and clearly written.

The Evolution Book

Sarah Stein

The whole picture, for middle school through junior high level, with lots of hands-on activities.

Science Is . . .

Susan V. Bosak

An eight-year research project involving educators, scientists, parents and children throughout North America and a review of more than 1000 science activity/resource books has resulted in a 515-page science resource titled *Science Is . . .*

The book has received the support of the National Science Teachers Association and the American Association for the Advancement of Science. It is designed to enrich elementary/intermediate programs; high school teachers also find it a good source of attention-getting, thought-provoking activities that lead into more complex material. Universities have found it to be required reading for student

teachers in courses such as science teaching methods or in teaching practica.

The hundreds of activities have been tested and require only readily-available, inexpensive materials. In addition to hands-on experiments and projects, the book includes puzzles, games, plays and stories. Activities range from "Quickies" to projects which can be spread over days or weeks. The approach to science is holistic and comprehensive. There are ten broad subject areas: Discovering Science, Matter and Energy, Humans, The Environment, Rocks, Plants, Living Creatures, Weather, The Heavens, and Applying Science. There is a "Using This Book" section and a directory of "Other Resources."

Science Is . . . costs \$29.95 from the NSTA (1-800-722-NSTA) or Scholastic (1-800-325-6149).

[Eds.' note—Ms. Bosak is associated with *The Communication Project*, Markham, Ontario, Canada; her comments were sent us by the *Science Is... Project*.] ♦

New Kentucky Newsletter

The Kentucky Paleontology Society now publishes a *KPS Newsletter*, available to Kentuckians or non-Kentuckians for \$10/yr. For subscriptions or more information, contact KPS, 365 Cromwell Way, Lexington, KY 40503 (606-223-8884).

Resources

Listing items here or offering to distribute them does not imply NCSE endorsement; annotations are by the editor or various contributors. "SASE" = "Self-Addressed Stamped Envelope."

Ager, Derek. 1993. *The New Catastrophism; The Importance of the Rare Event in Geological History*. NY: Cambridge University Press. xx+231 pp. \$34.95. A significant work on a topic often misused by anti-evolutionists. Technical.

Bartel, David P., and Jack W. Szostak. 1993. Isolation of New Ribozymes from a Large Pool of Random Sequences. *Science* 261:1411-1418 (10 Sept.). A landmark paper tests the idea of an early "RNA world." Randomly-occurring self-replicating RNA molecules mutated and evolved in the lab.

Bowring, Samuel A., et al. 1993. Calibrating Rates of Early Cambrian Evolution. *Science* 261:1293-1298 (3 Sept.). The Cambrian explosion of new species proves to have been even more rapid than once believed.

Brown, Walter T. 1992. *In the Beginning*. Noted in *B-S News*. 122 pp pb, \$9.00. "137 categories of evidence for creation" from creationist viewpoint.

Dawkins, R. 1993. Meet My Cousin, the Chimpanzee. *New Scientist* 138(1876):36-38 (5 June). Is the "gap" between humans and chimps arbitrary?

Flannery, Maura C. 1993. Evolution at the center. *American Biology Teacher* 55(6):372-375. Reflections on *The Origin*, Huxley's *Darwiniana*, and 20th century accounts of evolution.

Understandable introduction to evolution theory.

Forrest, Stephanie. 1993. Genetic algorithms: principles of natural selection applied to computation. *Science* 261:872-878 (Aug. 13, 1993). Just what it sounds like. Using computer models of natural selection to solve problems in evolution and other areas. Neat article.

Foster, Kenneth R., D.E. Bernstein and P.W. Huber. 1993. Science and the Toxic Tort. *Science* 261:1509-10, 1614 (17 Sept.). A "Policy Forum" discussion of the role of science in the courtroom and the nature of "expert" testimony.

Goodenough, Ward H. 1993. Evolution of the human capacity for beliefs. *Zygon* 28(1):5-28. Development of human language added to other primate capabilities leads to evolution of belief.

Harpending, Henry C., S.T. Sherry, A.R. Rogers, and Mark Stoneking. 1993. The Genetic Structure of Ancient Human Populations. *Current Anthropology* 34(4):483-496. Modifies the "Eve" hypothesis; at best, they

say, there were multiple migrations out of Africa, and some genetic changes developed elsewhere, too.

Horgan, J. 1993. Off to an Early Start. *Scientific American* 269(2):24 (August). Recent evidence for the early origin of cyanobacteria.

Johanson, Donald C., and Kevin O'Farrell. 1990. *Journey from the Dawn: Life with the World's First Family*. NY: Villard Books. 125 pp, virtually all in color, \$22.50. For middle school age kids.

Johnson, Phillip. 1993. Creator or Blind Watchmaker? *First Things: A Monthly Journal of Religion and Public Life* 29: 8-14 (January). A major exposition of influential lawyer Johnson's argument against evolution.

Kauffman, S.A. 1993. *The Origins of Order: Self-Organization and Selection in Evolution*. Oxford: Oxford University Press. NP. Order out of chaos, naturally.

McCollister, Betty. 1993. On the Other Hand: The Terrible Texts.

National Biological Survey

The National Biological Survey, a new agency of the US Department of the Interior, should lead a program that pulls together public and private organizations to gather environmental information. Its aim is to avoid costly confrontations over the nation's plant and animal life, according to a report released in October 1993 by the National Research Council. The National Partnership for Bio-

logical Survey, would help link federal and state agencies, museums, academic institutions, and other non-governmental organizations and coordinate their research efforts. The report, *A Biological Survey for the Nation*, is available for \$26 + \$4 shipping from the National Academy Press, NAS, 2101 Constitution Avenue, NW, Washington, DC 20418.

Resources

❖
Yee—
refuting a
major
creationist
“no
transitional
fossils”
claim
❖

The Humanist, Nov-Dec, pp. 40-41. Survey of textbook criticisms by NCSE, *Textbook Letter*, Bernstein-Tyson, et al.

McMullin, Eman. 1993. Evolution and special creation. *Zygon* 28(3):299-336. “Special creation ought to be regarded as, if anything, less rather than more likely than its evolutionary alternative.”

Mitchison, Avrion. 1993. Will We Survive? *Scientific American* 269(3):136-144 (September). Evolving and emerging diseases adapt to human demographic changes.

Nash, J. Madeleine. 1993. How Did Life Begin? *Time* 142(15):68-74 (Cover story, 11 October). Ambitiously researched survey article, sure to incense anti-evolutionists.

Nelson, Paul. 1993. Transcript of Michael Ruse's comments during the 1993 AAAS Meeting, with addendum by Phillip E. Johnson. Available from NCSE for \$1.00 + SASE.

Osterbrock, D.E., J.A. Quinn and R.S. Bashear. 1993. Edwin Hubble and the Expanding Universe. *Scientific American* 269(1): 84-89 (July).

Paabo, Svante. 1993. Ancient DNA. *Scientific American* 369(5):86-92 (November). Reconstructed fragments from thousands and millions of years ago—how they do it and what they learn (no dinosaur clones just yet!).

Rennie, John. 1993. Insects are Forever. *Scientific American* 269(5): 18, 20 (Nov.). Staying power, not adaptation to flowers, made for insect diversity, since

so many evolved before flowering plants.

Rydell, Robert W. 1993. Review of *A View to a Death in the Morning*, by Matt Cartmill. *Science* 261:1609-1610 (17 Sept.). Critique of the “naturalness” of hunting by humans, past and present. [Cartmill bk available from NCSE at discount—see centerfold]

Schrag, Peter. 1993. Bailing Out of Public Education. *The Nation* 4 Oct, pp. 351-354. The California voucher plan.

Somit, Albert, and S.A. Peterson, eds. 1992. *The Punctuated Equilibrium Debate in the Natural and Social Sciences*. Ithaca: Cornell University Press. 325 pp, NP. Fairly technical.

Vickers-Rich, P., and T.H. Rich. 1993. Australia's Polar Dinosaurs. *Scientific American* 269(1): 50-55 (July). More evidence for warm bloodedness.

Ward, P.D. 1992. *On Methuselah's Trail: Living Fossils and the Great Extinctions*. San Francisco: W.F. Freeman. xii+212 pp, NP. “Well-thought-out, informative and a good taste of field work,” says reviewer Frank Sonleitner.

Yee, Michael S.Y. 1993. The Origin of the Turtle Body Plan: Bridging a Famous Morphological Gap. *Science* 261:1716-1720 (24 Sept.). Parelasaurs—primitive reptiles—shown to be closest kin of turtles. Important research refutes another creationist “missing link” argument. ❖

Science Education

The Science, Technology, and Society Project at Arizona State University has published a 2-Volume *Handbook of Science, Technology, and Society*. Vol. I is “A Theoretical and Conceptual Overview of Science, Technology and Science Education,” with models and strategies for classroom use; Vol. II addresses hands-on science education for the middle grades, from biodiversity to water cycles. \$10 per volume (no C.O.D.s or P.O.s) from STS Project, ASU, FEE0911, ASU, Tempe, AZ 85287-0911.

Science Is Elementary is a quarterly series of booklets with hands-on activities, book reviews, and resource listings for elementary teachers. \$22

per year; contact Mary Francis Walsh, Museum Institute for Teaching Science, 79 Milk Street, Suite 210, Boston, MA 02109-3903 (617-695-9771).

The New Careers Directory: Internships and Professional Opportunities in Technology and Social Change, 4th edition. \$18+\$3 shipping from Student Pugwash USA, 1638 R Street, NW, Suite 32. Washington, DC 20009 (202-328-6555).

Teacher's Guide to World Resources 1992-93. 150pp of secondary school coursework from WRI Publications, P.O. Box 4852, Hampden Station, Baltimore, MD 21211 (800-822-0504 for MasterCard orders). \$5.95+\$3 shipping. ❖

Keeping Tabs

Jurassic Park on the Ark

Kent Harker

Jurassic Park and Barney have the country awash in dinosaurs, and the creationists are apoplectic about it. Before the film and adorable stuffed doll, it was easier to ignore the troublesome beasts and the problems they cause. However, we can imagine that the ICR is doing a land-office business with its dinosaur books and tapes.

It amazes me that I can still be amazed about some of the things I hear from the creationist camp. Since I spend a fair amount of time in my car, I sometimes listen to the Southwest Radio Bible Church because their broadcasts often feature prominent creationists. Today's program (August 6) was a special treat featuring the Rev. Carl Baugh (one of the "experts" featured in the recent CBS Noah's Ark fiasco).

For those interested in Baugh's academic background, please see *Reports* 9(6):18. Baugh says he has a Ph.D. in paleontology (among many other fields). He is glib with technical terms, usually pronouncing them properly, so he may sound credible, but it all goes down the drain when he parleys his dinosaur spiel. Baugh's explanations really lightened a hard afternoon drive for me.

He says *Job* 40:15, "Behold now behemoth, which I made with thee; he eateth grass like an ox" refers to a dinosaur [See *C/E* 15, 17, etc. for detailed analyses of Baugh's claims]. This means they lived during Job's day, a mere 99.985% time error. The host interviewing Baugh said, somewhat shrinkingly, "Well,

that means they were on the Ark." Baugh confirmed that, indeed, they were there in all their "kinds." The conversation quickly moved on to other areas without discussing dinosaurs in wooden cages.

Baugh went on to explain that sightings of "Nessie" and her cousins in Lake Tahoe and the Great Lakes are really glimpses of dinosaurs. What's more, he said that some of the strange lizards recently found in Australia are really mini-dinosaurs, "shrunk" by post-Flood conditions! Baugh said, "If we had the funding to build a hyperbolic enclosure to duplicate the pre-Flood environment we are confident those lizards would return to their original size." He apparently forgot that he had just finished a sentence about giant, unshrunk Nessie. He speculates that the "vapor canopy" completely shielded the Earth from UV radiation and exerted double our current atmospheric pressure, making the Earth a lush, tropical garden in which everything was jumbo sized. [*He used to claim the atmosphere was ozone instead of regular oxygen, too—Ed.*]

But there's more.

Baugh then announced that we could see God's grand purpose in creating these giant vegetarians: they were pruning machines. It seems conditions were so fertile that Adam "... would not be able to show Eve the Moon," so thick would be the giant vegetation without the work of munching dinosaur harvesters!

It seems to me that there would be more problems living with dinosaurs than seeing the moon, so I tried to call in a couple of naive questions, like how would the

Moon be visible through the vapor canopy in the first place? Since there would be no more lush vegetation after the Flood and no canopy after it fell to cause the Flood and the dinosaurs thus seemingly out of a job, why overburden the Ark only to kill them off (or shrink them?) a short time later? I didn't get to ask.

Bad Book Alert

Joan B. Melvin

I am returning the book *Biology Teacher's Survival Guide* by Michael F. Fleming to Education/CARE, Paramount Communication Company of Des Moines. It is totally unsuitable for biology teachers because on page 123 it says, "... there are two main theories about life's origins, evolutionism and creationism..." Such statements as appear in this section have no place in any responsible book on biology. Evolution is the *only* theory that can explain so many of the details of diversity and unity of life so well. Creationism may have a place in a religion course, but it certainly does not belong in a science course. In the sense the term is used in science, creationism is NOT a theory, and it is not science. I am concerned because this book may be used as a guide by new teachers and influence them to give erroneous information to their students. This section destroys any merits the rest of the book may have.

This is an edited summary of a letter to the publisher sent to NCSE by Dr. Melvin of the Winsor School, Boston, MA.

❖
Flash—
Dinosaurs
created so
Adam could
show Eve
the moon
❖

Keeping Tabs

Changes at Bible-Science Association

John Cole

❖ The *Bible-Science News* may be in for some radical changes. Rev. Paul A. Bartz, long-time editor and former B-SA executive director, has been replaced as editor by Jan Resser. Bartz, once a protege of B-SA cofounder Rev. Walter Lang, remained with the organization when Lang departed. Creationist-watchers have seen the B-SA veer heavily into general "religious right" issues recently, seeming to downplay "scientific" creationism. Gregory Hull had succeeded Bartz as executive director in an earlier shake-up. Bartz has a half-page devotional item in this latest issue.

A change in editorial direction seems to be in the offing. Paul Nelson is now "Contributing Editor," as of Vol. 31:7, just received (mid-Oct). Nelson, a Ph.D. student in philosophy at the University of Chicago, is known for intellectual integrity (and training). His long article in *Origins Research* 15(1):1 ff., "The Whole Question of Metaphysics," was a largely critical review of the NCSE-sponsored AAAS symposium in February. Participants in that session whom I have interviewed did not agree with much of his analysis, I should note, but they "disagreed," thought "he misunderstood," etc. rather than accusing him of dishonesty.

Nelson provides the front page article for this *B-SN*: "Language, Natural Selection and Creation." (His conclusions are wrong but neither laughable nor stupid!)

B-SN 31(7) has a tone which seems less sensational and/or hysterical—no references to geocentrism, no hints that opponents are Satanists, no endorsements of weird claims about Noah's Ark or Paluxy footprints or geocentrism.

If this first issue is an example, B-SA is adopting the new mainstream creationist approach of criticizing evolution rather than advancing easily-disproved or derided claims. This issue reads a bit more like a *Students for Origins Research* publication rather than a creationist *National Enquirer*. SOR has long prided itself on a sober, scholarly style and a certain openness to disagreement.

B-SA commitment to their foregone conclusion has not wavered, but the presentation is no longer laughable. For example, Richard

Lewontin's critique of ideological belief in natural selection, whatever the evidence, no matter what, is quoted intelligently without asserting that Lewontin is, therefore, endorsing creationism! (Creationists are supposed to think it, perhaps, but the article does not spell it out or claim that Lewontin has joined their camp.) Lewontin, of course, was arguing (to oversimplify) that evolution did occur and works as a science and should not be an "ism."

If B-SAers really opt for intelligent argument, they strengthen their position; their long-time fringiness was an easy target for critics. Ironically, perhaps, the ICR seems to be leaning towards greater religious right sociopolitical and evangelical stances via spokesman Ken Ham. ❖

Christian Educators Seek Route to Teaching Creationism

Eugenie C. Scott

The Christian Educators Association International held its 24th annual meeting in Colorado Springs, CO, in July of 1993. They were told, according to an article in the Colorado Springs *Gazette-Telegraph*, that religious subjects could be brought up in class by "planting" questions from Christian students so that Biblical issues could be discussed. Similarly, religious words could be listed for spelling tests, and students could be given religious topics for term papers, thus encouraging discussion of religious topics.

Creationism, according to CEAI, could be given equal time with evolution "by relying on the very case law that's seen as establishing the separation of church and state" (*Gazette-Telegraph*, July 27, 1993, p. B1). As discussed frequently in *NCSE Reports*, the Supreme Court *Edwards v. Aguillard* decision provides loopholes now being used by antievolutionists to promote their views (*Reports* 9(2):14-15; 13(2):1). The loopholes appear to give free rein to such neo-creationist concepts as "intelligent design theory," "abrupt appearance theory," and "evidence against evolution." ❖

❖
B-SA and
ICR—
trading
places?
❖

NCSE News

NCSE Symposium Scheduled at AAAS 1994

Eugenie C. Scott

NCSE's symposium proposal to the American Association for the Advancement of Science will be on the AAAS 1994 program. (Only 50% submitted proposals are accepted, and we've been successful two years running.) Our session, *Anti-Science/Anti-Evolution*, will take place Sunday, February 20, 1994, 2:00-5:00 at the Parc 55 Hotel in San Francisco, CA.

Speakers and their topics will be Kevin Padian (*The Triumph of the Creationist Method*), Francisco Ayala (*Evolution and the Bible: What is the Conflict?*), Bernard Ortiz de Montellano (*Evolution and Multiculturalism*), Norman Levitt (*Bewilderment and Hostility in the Postmodern Attitude Toward Science*), and Eugenie C. Scott (*Discussant*).

We hope many NCSE members from around the country can attend. San Francisco Bay area members should contact me if they can help organize a get-together for NCSE members. We'll

let you know what develops in the next issue.

The symposium abstract follows:

Science as scientists see it is not at all the same phenomenon as science seen through the eyes of many of our fellow citizens. Evolution, a theory within science, in particular exemplifies the gap between the vision of scientists and the vision of the nonscientist citizen.

This session will look at science and evolution as seen through others' eyes: the postmodernist "academic left," the "scientific" creationists, and certain "multicultural" educationists. It is the contention of the speakers that these eyes look with both myopia and astigmatism: critics of science and evolution criticize from a serious lack of understanding of how science works, as well as from a lack of some of the basic understandings of the natural world that science has brought us. Further, modern science and especially evolution are viewed as dangerous, even menacing, by some of these recent critics. For philosophical reasons or to

achieve social and political goals, these critics distort both the nature of science as an intellectual enterprise, and evolution as a scientific principle.

There are practical consequences of these fundamental misunderstandings, as this particular set of critics influences both the K-12 education system and higher education. Their ideas are expressed in textbooks and school curricula, and even in scholarly journals. The next generation of scientists is being exposed to these ideas, but more importantly, so is the next generation of voting, and technology-using citizens. As science is largely dependent upon society for its support, it behooves scientists to take these challenges seriously, and strive first to understand them, and then to counter them with accurate information on the nature of science and evolution. ❖

February
20, 1994
2-5 PM

Manny Sillman Honored

John Cole

Emmanuel Sillman, retired physics professor and Pennsylvania Committee of Correspondence Liaison, was voted a "Friend of Darwin Award" in 1993, saluting his tireless contributions to evolution education. He has worked for years in the Pittsburgh area, statewide and on

the national stage to uphold evolution education at both the pre-college and college levels. From working with school committees and students to debating ICR's Duane Gish to hosting the small "evolutionist camp" at periodic Pittsburgh creationist conferences, Sillman has earned a debt of gratitude from educators nationwide. ❖

NCSE Member Silver Honored

NCSE member and church-state separation activist Queen Silver will be honored at the 1993 Humanist Association of Los Angeles annual Awards Banquet, in November. Silver has long advocated maintaining the integrity of science by keeping creationism out of the science classroom, and in California, has testified before the state Department of Education in support of good textbooks. Congratulations!

NCSE News

Board Members Report

In recent months NCSE Board Members have tracked dinosaurs, explored evolution history, hunted primate fossils, worked on animal lab policies, bailed hay, advanced environmental research, helped introduce inner city students to science, consulted with museums, written research articles and founded publications.

President Jack Friedman is teaching in New York at Nassau Community College, specializing in science education for inner city and minority students.

Laurie Godfrey did field research on lemur paleontology in Madagascar this summer, excavating fossils deep in guano-filled limestone caves. She continues to publish technical papers about primate evolution and anatomy and has recently published reviews of several books such as Numbers' *The Creationists* and a study of Darwinism and the press. Her pioneering paper (with senior author Daniel Povinelli) on the nature of primate cognition, "The Chimpanzee's Mind: How Noble in Reason? How Absent of Ethics?" has recently been published as a chapter in *Evolutionary Ethics*, ed. by Matthew and Doris Nitecki (SUNY Press, Albany). How unique is human cognition—the understandings of consequences, for example, or the ability to attribute motives or plans to others?

Kevin Padian spent the summer doing research on dinosaurs at several museums and researching a Berkeley library manuscript by Robert Owen via exploration of Library of Congress resources. His articles on "Science in Boxes" (*Textbook Letter* and a related Summer *Skeptical Inquirer* article)

criticized classroom use of "hands-on" science units without integrating them, leaving science to look like a series of unrelated little boxes. Unpopular or touchy units such as evolution can simply be skipped, he notes. He recommended greater interest and involvement on the part of scientists and an improved crop of textbook writers. He continued to work with the California Department of Education on science curriculum and textbook policies.

Padian gave two papers and two poster sessions at the October annual meeting of the Society of Vertebrate Paleontologists. In November he will give several talks at the North Carolina Science Teachers Association, and he will run a "short course" on dinosaurs at the March national meeting of the NSTA.

Mac West has been working as a museum consultant in the US and other countries via his firm, RMW Science Action (3811 Jenifer Street, NW, Washington, DC 20015; tel:202-362-5823. In June 1993, he launched a new publication with Dr. Robert L. Russell, *The*

Informal Science Review. Designed to be a new source for useful, serious and fun informal science education—that is, education outside the classroom proper. Zoos, museums, nature centers, libraries, clubs, and community organizations are the target audience, along with the communications media. The 12-page bimonthly is \$45 per year from The ISR, P.O. Box 42328, Washington, DC 20015.

John Cole will speak at a Smithsonian-sponsored session at the November American Anthropological Association annual meeting. He continues to work on environmental issues at the Massachusetts Water Resources Research Center.

Ronnie Hastings, a Waxahachie High School teacher, has been involved with the imperilled Superconducting Supercollider project headquartered at Waxahachie and working on the nearby family farm/ranch over the summer. (As we go to press, the Supercollider project has apparently been killed by a joint Senate-House committee, except for closing-down costs.) ♦

Report and Creation/Evolution Now Printed on Recycled Paper

We are happy to report that beginning with issue 13(2) of *NCSE Reports*, NCSE publications are being printed on recycled paper. The stock used for the newsletter is composed of 100% recycled paper, including 25% post-consumer waste, as will be the stock we use for the next issue of *Creation/Evolution*.

NCSE also uses recycled stationery and envelopes, and when possible, re-uses clean shipping materials. Our office also participates in the City of Berkeley's recycling program, recycling all its paper and cardboard. In Massachusetts, our editor recycles all paper he uses via his local recycling system, and he re-uses blank sides of ms. pages for draft copies. ♦

NCSE News

Changes at NCSE Berkeley Office

NCSE welcomes new office manager Erik Wheaton, who replaced Madeleine Clark in October. Madeleine is on maternity leave after the birth of her new daughter on September 30.

Erik comes to us after several years of nonprofit experience as a manager and supervisor at University of California-San Francisco Department of Psychiatry AIDS Health Project. He joins part-time staffers Teresa Kim (general office, book-sales, resource center) and bookkeeper Tully Weberg.

Madeleine Clark will be back part time as project director for the Prepublication Review Project after a few months. Other project directors at NCSE include Anne Hayes, director of the Human Evolution Education Network (HEEN), and Molleen Matsumura, director of the Network/Committee of Correspondence Project. These and similar projects are designed to integrate and coordinate volunteer efforts, often with grant support for specific projects. ♦

NCSE Member California's Outstanding Biology Teacher

Eugenie C. Scott

Thomas Atkins, biology teacher in Fresno, CA, has been selected by the National Association of Biology Teachers as California's Outstanding Biology Teacher for 1993. Atkins, an NCSE member of long standing, has taught biology with great enthusiasm for 28 years, including costumed stunts as

Charles Darwin or Gregor Mendel. Several years ago he developed a computer simulation game of evolution called, "Bebledwark World" (write Best Biological Software, 101 Wood Duck Drive, Sanger, CA 93657; 209-787-2340).

Congratulations, Tom! NABT made a good choice! ♦

NCSE on NPR

Genie Scott, NCSE Executive Director, appeared October 1, 1993 on *Science Friday*, a nationwide two-hour interview and audience call-in program. (The show is daily; Fridays are devoted to science). The Host, Ira Flatow, has been a National Public Radio sci-

ence reporter for some time, and he is host of the television science show for kids, *Newton's Apple*.

Appearing on the show along with Dr. Scott was Berkeley law professor Phillip Johnson. Ira Flatow quickly steered the discussion away from "What is the scientific

evidence for evolution or against it?" towards Johnson's favorite topic—his argument that evolution is a "materialistic philosophy" and therefore needs to be lambasted. During and after the show, NCSE received dozens of calls, virtually all of which were supportive and asking for further information. ♦

NCSE's 800 "Hotline"

Eugenie C. Scott

Now NCSE has an 800 number that people needing information on the creation/evolution controversy can call.

The NCSE "Hotline" is

1-800-290-6006

As word gets out, the number is proving useful. After I appeared on NPR's *Talk of the Nation* show, *Science Friday* on October 1, NCSE received dozens of calls from people grateful that such an organization existed—the volume of calls taxed our ability to respond, in fact, but we coped!

The 800 number should make it easier for teachers and parents to contact us for help, and it also makes it easier for NCSE members to renew their memberships and purchase books and other materials conveniently. (It is not free, though—your "self-subsidized" calls to 510-526-1674 are also appreciated.)

❖
Remember—
Creation/
Evolution
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are available
with
answers to
most
creationist
claims!

❖

Letters

Johnson on Scott & Ruse

I have just received the Summer 1993 issue of *NCSE Reports*. This time, (NCSE Executive Director) Eugenie Scott herself tries to clean up the mess left behind by Michael Ruse at the AAAS Meeting in Boston. (Arthur Shapiro's effort in the last issue evidently did not suffice.) What particularly delights me is the logic of her conclusion: Michael Ruse predicted that a slick lawyer like Phillip Johnson might quote his remarks out of context. A complete transcript of Ruse's talk has been widely distributed. This proves Michael was right!

I can't imagine what the NCSE directors make of all this. Here they conduct a program before a friendly audience at the AAAS Meeting with nobody permitted to defend the persons under attack, and manage to embarrass themselves so badly that eight months later they are still trying to explain it away. What are they going to do when they have to play against another team?

I note that NCSE is selling the Paul Nelson transcript of Ruse's remarks (with addendum by Phillip E. Johnson) for \$1.00. I hope they sell a lot of copies.

Phillip E. Johnson
Boalt Hall College of Law
Univ. of CA, Berkeley

Ed—Since two or more creationist organizations took up the "cause" this summer, including out of context quotations, we thought additional comment was reasonable.

"Popperism" and Science

Arthur M. Shapiro (*Reports* 13(1)) goes on at length criticizing "Popperism." He says it is "notorious" in fields which have "reputations as soft, fuzzy, and ill-defined." "Popper-worship . . . (allows adherents) to be 'soft' while claiming to be 'hard' . . ." I'm puzzled by this, because my understanding of Popper has led me to just the opposite.

I am a self-educated person who has come upon Sir Karl Popper's writings as a breath of fresh air in the "what is science" debate, where "new paradigms" are pitted against "Western (white, male) science." I have found his concepts very useful in debating "alternative" medicine and creationism. To the best of my understanding Popper is the principal proponent of the twentieth century concept of the scientific method. Popper taught us the relative nature of scientific research, that it can lead to ever-more-rigorously tested and therefore ever-more-useful theories, but never to an absolute "truth."

I've heard that Popper has been much misunderstood in academia, and it may be second-hand misconstructions of his philosophy which Shapiro is, rightly, criticizing. Many may know Popper only as an opponent of Marxism and may revile him for that without actually reading his work. Karl Popper is alive today, still writing, and should not be put down without a genuine argument. I challenge Shapiro to be more

specific about which of Popper's writings he disagrees.

Dan Dugan
San Francisco, CA

Arthur Shapiro replies:

I agree that Popper's work has been very useful in helping to define criteria to delimit science from non-science, which is precisely why it has been so popular. The trouble is that things are more complicated than that.

Almost as soon as Popper's ideas were codified, they came into conflict with the "sociological" views of Thomas Kuhn and the virtual "anarchism" of Paul Feyerabend. Imre Lakatos greatly refined Popper's naive falsification in a paper in *Criticism and the Growth of Knowledge* edited by Lakatos and Alan Musgrave (Cambridge 1970). Lakatos' more sophisticated approach corresponded more closely to what scientists actually do but in the process lost the simplicity and elegance of Popper's position.

There have been many critics of Popper. Some have been motivated by Marxism; certainly I am not one of those. Most critics perceive his position as too idealistic, describing how science *should* work, not how it actually functions. The choice is not between Sir Karl and anarchy and UFOs. I recommend Larry Laudan's *Science and Relativism* (Univ. of Chicago 1990) as a good summary. It's full of "in jokes," though, so you may need a philosopher on call when you read it.

Anti-religious Prejudice?

I was disturbed by an article that appeared in the *Spring Reports* and wish to make my displeasure known. It is a symptom of a larger problem which I hope you will address as editor.

Having recently graduated from Duke U (Civil Engineering '92), I like to think of myself as fairly educated in basic science. As an evangelical Christian I am also well versed in the theology, history and doctrine of my faith. I therefore find myself caught between these dynamics in my search for truth about our origins. I have turned to your publications as sources to aid in my understanding of the issues.

Since subscribing I have felt an underlying tone of hostility towards all things Christian. Two recent events have solidified this perception. First, you sold my name to the American Humanist Association, which stated in their appeal for money, "Humanists reject all forms of belief in the supernatural. . . ." That you believe all your readers are of this ilk reinforces the idea of your hostility to Christianity.

Secondly, in one article (p. 15), I find part of the piece exhorting me to fight anti-abortionists, tuition tax credits, and school prayer. To fight these fights undermines your whole legitimacy. I turned to you for scientific understanding of the front-line events and issues only to find you standing not on the foundation of scientific truth but on the pedestal of bias and anti-Christianity. Keep

Letters

your focus on creationism, for when it becomes Christianity you have not only lost your authority, but me as a subscriber.

Peter Barton
Groveland, MA

Ed: Like most nonprofits, NCSE occasionally sells or lends its mailing list to other nonprofit organizations. We are sorry if one of them offended you, but the sentiments you note were AHA's, not ours. On the membership form and on the back of Reports, we have a check-off box for anyone who

does not want his or her name shared. (I've forwarded your objection to the publisher.) As to our "anti-Christianity," I'd note that I also get complaints about my bias towards religion! NCSE has been widely applauded for being religiously and politically neutral and takes no position on abortion,

for example, but we do report on "religious right" efforts to take over public schools and institutions when their package includes creationism, and we see church-state separation as an important defense of religious freedom and scientific integrity. ♦

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See page 35

EDITOR'S DESK

This issue combines two numbers—13(4) and 14(1). This is not to bedevil librarians (to whom we apologize abjectly) but rather to recognize that last year we published a “free” Index issue and lots of extra journal pages and that the Fall issue was slower to appear than expected; your editor has been slog-ging an uphill battle against time ever since, trying to publish on schedule, adhere to a budget, and get info out as needed. So we have a double issue this time.

John R. Cole

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Cover: Galapagos Islands map from *What Darwin Saw* (1882)

Our last issue included several articles about Religious Right and school voucher campaigns. It also included an editorial note, rather hidden as a reply to a letter, explaining NCSE's approach to such things. NCSE does not take positions on specific political issues, but it does argue for evolution education—as a result, we include articles on topics such as the California “voucher” debate which would have funded antievolutionist schools and curricula. We support evolution education and good science education, in general, and tie the two together—hardly a controversial position, I hope.

While we would like to see all schools teach good science, we respect the right of religious schools to teach whatever their faiths dictate (within reasonable limits such as safety and basic “truth-in-packaging” rules, for example). In the area of higher education NCSE has expressed concern about state-licensed college degrees and teacher-training programs at the ICR which produce “creation science” graduates purporting to be scientists and science educators, but most of our attention has been paid to public schools where most children are educated and where the church-state separation issue is clear. We endorse academic freedom while noting that incompetence is not protected by that doctrine! And we have pursued the theme that in K-12 schools academic freedom is somewhat restricted by curriculum rules or guidelines or laws more so than in higher education where consumers are basically adults and not a captive audience.

Another note—most readers are not “correspondents,” but we sprang up from the “Committees of Correspondence” and still rely upon your correspondence and information and tips—not necessarily quoted by name (if that's the way you prefer, tell us). I appreciate receiving clippings and manuscripts from readers; even if they are not published, they become part of an NCSE archive with future uses. (Manuscripts are returned if accompanied with stamped self-addressed envelopes.) But I sometimes receive manuscripts with no author's name or return address on them, which can be very problematic! Some seem excellent, but what do I do with them? If you write something, be sure to put your name and address on the article or letter itself, not just the envelope from which it might be separated easily; ditto especially for diskettes, which all look alike! If an article needs to be reviewed “blind,” I'll remove or block out your name before circulating it.

Submission on diskette is **greatly** appreciated—it was probably written on a computer, anyway, these days, so you can save us a lot of time and money by sending me a cheap (**labeled!**) floppy copy, even for a 2-3 page *Reports* manuscript or letter which will cost \$5-\$10 to retype (Use WordPerfect or ASCII, if possible; Word can also be translated). We can also reuse your 50-cent diskette or return it if you enclose postage. (We're extremely frugal with your subscription money!)

John Cole

Florida Resolution Promoting Creationism Introduced

Eugenie C. Scott

Florida State Representative Buddy Johnson has introduced HR 2755, a resolution "recognizing creationism instruction in schools as a choice." The resolution, in a series of "Whereases," cites a number of classic church-state separation Supreme Court cases such as *Board of Education v. Pico*, *Palmer v. Board of Education*, *Epperson v. Arkansas*, and *Abington Township v. Schempp* to try to argue that the Supreme Court has supported neutrality towards religion, and that indeed, a topic needn't be banned from being taught merely because it is based in the Bible. It also reiterates that school districts have great discretion in the management of school affairs. From these principles the resolution inexplicably goes on to state, "That the House of Representatives of the State of Florida hereby recognize that the United States Supreme Court has not ruled against the teaching of creationism in public schools."

Of course, this is precisely what *Edwards v. Aguillard* does, but the only reference to *Edwards* in the pantheon of Supreme Court judgments is to quote Justice Brennan as having said "that religious ideas, no less than any other, may be the subject of debate which is uninhibited, robust, and wide-open." At least Representative Johnson has read the decision, though he apparently didn't learn much from it.

Florida teachers are concerned that this measure may be appended to a

bill currently in the Legislature that promotes prayer in school. The prayer bill is felt to have a sure chance of passing.

Also making its way through committee, and guaranteed of passage, is a bill co-sponsored by 46 representatives and the Committee on Education that uses much of the same wording as a law passed in 1992 in Kentucky (see *Reports* 13(2):7). This bill sounds innocent: it allows a school district to post in schools excerpts of "historical documents and records related to American history" of a very wide range. Statements of presidents, members of congress, leaders of the civil rights movement, congressional acts and of course the grand documents of the Declaration of Independence and the Constitution are all included. Sounds innocent, until one considers that the *Congressional Record* prints anything any Congressman sends it, whether presented on the floor of Congress or not. Such legislation has been urged passage in every state by the Institute for Creation Research, which makes one wonder what sorts of postings a school district may have available to it.

In both the Kentucky and Florida legislations, districts are directed not to "censor" based on religious references in these writings, documents, and records. Fortunately, in Florida they are also directed not to choose such documents "because of their religious content." Perhaps this latter clause will restrain enthusiasts from promoting sectarian religion in the classroom. NCSE

members have learned that vigilance is necessary to keep such practices from occurring. We encourage our Florida members to monitor their local schools once this bill passes.

Representative Johnson's creationism resolution may also be attached to this "historical documents" bill, which would assure its passage.

Note to members in other states: be on the lookout for this "historical documents" ploy, and let us know if it appears so NCSE can keep everyone informed. ♦

Creationists and the Grand Canyon

"Scientific" creationists argue that the Grand Canyon was formed almost literally overnight by Noah's flood waters. The Institute for Creation Research leads annual field trips to the canyon where they teach their students (and amaze passers-by) that this mile-deep erosion through distinctly bedded rock was caused by a single catastrophic event.

OK. So you're convinced a mile-deep gully could form this way. Then what about El Canon de Colca in Peru, which is 10,574 feet deep? The same amazing arguments apply, I suppose, but I've never seen creationist references to this grander canyon! (It's twice as deep but not as long—still, it deserves some publicity and creationist tourism, I think.) [JRC] ♦

♦
"The United States Supreme Court has not ruled against the teaching of creationism in public schools."

♦

Louisiana District Narrowly Rejects

Edwards Decision Echoes In More Than One Way

Eugenie C. Scott

The Tangipahoa Parish School System voted on March 1, 1994 to accept a curriculum committee decision not to introduce "non-religious, scientific models for teaching creation and evolution in the public school classroom." The vote of the school was 5-4. Tangipahoa is a rural area east of Baton Rouge and north of New Orleans, writes NCSE member Grant Smith. Hammond, at about 15,000 population, is the largest town in the parish and is the seat of Southeastern Louisiana University.

The controversy began in the fall of 1992 when school board member Jake Bailey requested the district consider teaching "alternatives" to evolution. The topic was turned over to the district's Education and Curriculum Committee, which considered it along with general issues about religion in schools. The community polarized around the issue quickly, and letters to the editor flew from

both sides. Leading the charge on the evolution side were professors from science departments at Southeastern Louisiana State University. On the creationism side were members of the Origins Resource Association (ORA) of New Orleans.

Edward Boudreaux and David Prentice are the leaders of the ORA. Boudreaux was a key figure in the Louisiana legislation leading up to the 1987 Supreme Court decision, *Edwards v. Aguillard*. He was consulted by the framers of the legislation and testified on its behalf in the legislature. He is now retired from the University of New Orleans.

At one point, partisans squared off in a public debate held under the auspices of the school board, attended by Tangipahoa Parish citizens and others from outside the area. ORA's Prentice argued that evolution is a belief system, and that teaching "multiple theories of origin" would increase the students' critical thinking. College professors vigorously defended the teaching of evolution,

causing one of the school board members to state that she was "glad her children have already graduated from college so they won't have to take classes under these professors" (*Hammond Daily Star*, 1/7/94, p. 1).

Education and curriculum committee members heard testimony from ORA members and scientists from SLU in December, while developing their multi-part policy on religion and education. The proposal included statements about graduation prayer, holiday observances, the distribution of religiously-oriented materials, and student religious organizations as well as the statement "broadening" the teaching of evolution. As expected, the proponents of "alternatives to evolution" were using a loophole in the *Edwards v. Aguillard* Supreme Court decision to try to wedge creation "science" into the curriculum. Saying that the Supreme Court stated that the teaching of "a variety of theories about the origin of mankind may be included if done with clear secular intent of enhancing the effectiveness of science instruction," creationists pushed for including scientific creationism (described by Boudreaux as having "nothing to do with religion"), "intelligent design theory," and "evidence against evolution." Textbooks recommended by ORA included Davis and Kenyon's *Of Pandas and People*, Thaxton, Bradley and Olsen's *The Mystery of Life's Origins*, and Denton's *Evolution: A Theory in Crisis*. (All three of these books are reviewed in NCSE's *Reviews*

College Textbook Censorship, Too

College professors' relative freedom to select and shape course material does not mean that textbook censorship does not affect college education. When students have spent twelve years reading books based more on market forces than on scholarly excellence, they may not come to college prepared to do college-level work. The increasing use of short sentences and simple words—often called "dumbing

down"—in elementary and secondary school textbooks has generated a great deal of print since the mid-1970s, but the watering down of ideas is at least equally dangerous.

Joan DelFattore, in *What Johnny Shouldn't Read: Textbook Censorship in America* (Yale University Press); quoted in *Science* 261, 3 September.

"Alternate Theories of Origin"

of *Creationist Books*; see Resources.)

Surprisingly and encouragingly, the curriculum committee voted in its January meeting to delete the "alternate theories" policy, and indicated that in its report to the Board.

At the showdown school board meeting March 1, 1994, the curriculum committee brought forth its proposed policy. Members of the school board opened the "alternates to evolution" item for reconsideration, which generated a lengthy discussion. The district's lawyer, Alton Lewis, argued against the policy, stating that the courts would be sure to strike down such a curriculum. "It's all motivated by the intent to allow the teaching of creation science, which is unconstitutional" (*Ham-*

mond Daily Star, 3/2/94). The board was approached by a citizen offering assistance from the Center for Law and Religious Freedom, a Virginia-based organization defending religious-right causes. According to the citizen, the Center supported the wording of the policy on "alternate theories." The board considered inviting a lawyer from the Center to assist it, but declined to do so for financial reasons.

The Board eventually voted 5-4 not to re-introduce the "alternates to evolution" into the religion policy, but this does not seem to have settled the matter. A member called for the curriculum committee to develop a curriculum that would again include "alternates to evolution." Proponent Art Zieske stated that he did not consider the issue dead and an-

ticipated more efforts to get creationism into the classroom.

Readers of *Reports* know that "alternates to evolution" is a code-word for "scientific creationism," as is "Intelligent Design Theory." Attempts such as this one in Louisiana are occurring more frequently, although there are still efforts to put old-fashioned "scientific" creationism into the curriculum, as well. Members of NCSE are also aware that grass-roots work of the kind done by SLU professors and other concerned citizens is vital to keeping sectarian religious ideas out of the classroom and keeping evolution in curricula. Special thanks go to these professionals who took considerable time out from their regular work to support good public education in their communities. ❖

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Kenyon's
department
said to have
no
mechanism
to deal with
controversies.

Kenyon con't from p. 1

ternatives is only a small part of the total course's 27 lectures.

Kenyon claims he teaches evolutionary biology, and then follows that with a critique of macroevolution and theories that explain the origin of life via natural processes. Although his course outline lists such topics as dust layers on the Moon, decay of the Earth's magnetic field and possible secular changes in the moon, and possible secular changes in the of light of these arguments and implications for radiometric age determination, for example. Kenyon claims not to support young-earth creationism.

Faculty have not sat in on Kenyon's course, but they have had many years of student complaints. Hafernik discussed the student

complaints with Kenyon, who denied he was teaching Biblical creationism. When the two could not resolve the problem, the chairperson rescheduled Kenyon to teach other courses in the following semester (Spring, 1993), rather than Biology 100.

Kenyon requested that the Academic Freedom Committee of the Academic Senate study the matter, claiming his academic freedom had been violated. The AFC studied the matter through the spring of 1993 and reported their conclusions in 1993. Their 15-page report, inexplicably titled "Punctuated Equilibrium: A Report of the Academic Freedom Committee," focused primarily on the academic freedom issue rather than the appropriateness of teaching "intelligent de-

sign" in a science class. (The report is available from NCSE for \$1.50 and an SASE.)

Members of the Committee consisted of faculty from the library and the departments of English, Nursing, Broadcast Communication Arts, and Social Work Education. The report noted that for over 15 year there had been complaints about Kenyon's introduction of creationism into the biology curriculum. The department was chided for failing to develop governance mechanisms that would deal with such matters. Members of the Committee faulted the department chairperson for not bringing the matter to appropriate departmental committees for discussion, instead of deciding to re-

Kenyon, cont'd on p. 13

The Big Splash

David Morrison

Next July the solar system will experience the biggest interplanetary collision in recorded history when a disintegrating comet called Shoemaker-Levy 9 splashes into the planet Jupiter. While the energies involved are tiny on a planetary scale, they will dwarf anything achieved by human engineering, and this unprecedented event reminds us of the role of collisions in the origin and evolution of life on the earth.

The evolutionary significance of collisions with asteroids and comets has been apparent to most scientists for about a dozen years, since the publication of the pioneering work by Luis and Walter Alvarez and their collaborators of evidence that the Cretaceous extinction 65 million years ago was caused by an extraterrestrial agent. For more than a decade evidence has accumulated that the impact of a 10-20 km diameter comet or asteroid led to an environmental catastrophe, with consumption of most terrestrial biomass by fire, a global pall of stratospheric dust resulting in rapid drop in land temperatures and cessation of photosynthesis, and large scale changes in ocean chemistry. The resulting collapse of natural ecosystems produced the mass extinction that marks the end of the Cretaceous, including the extinction of the dinosaurs. Discovery of the impact crater (Chicxulub) in the Yucatan and a recent suggested upward revision in its size to

nearly 300 km have contributed to the widespread acceptance of this scenario for the Cretaceous extinction.

While the connection of other mass extinctions with impacts is not so clear as the association of the Cretaceous event with Chicxulub, it is evident that impacts play a significant role in evolution, being responsible for some if not most mass extinctions. David Raup of the University of Chicago and Stephen Gould of Harvard have hypothesized that impacts, and disasters caused by impacts, are among the most important factors in biological evolution. Modern students of evolution are beginning to accept that major impacts, occurring at intervals of tens to hundreds of millions of years, must be considered an important part of the environment in which evolutionary change takes place. Neo-catastrophism is being integrated into neo-uniformitarianism.

There is, of course, a contemporary hazard associated with comet and asteroid impacts. If it happened to the dinosaurs it can happen to us.

Indeed, an impact far too small to produce a mass extinction could still lead to short-term environmental effects that would cause massive crop loss, global starvation, and the possible breakdown of civilization. There is a greater than one-in-a-million chance of such an event taking place in any one year. Although this current hazard is the subject of considerable scientific interest and has led to a 1992 cover story in *Newsweek*, two NASA reports, a major book now in prepa-

ration, and a 1993 Congressional hearing, the risk of an impact still seems pretty remote to most people.

The advent of Comet Shoemaker-Levy should stimulate public interest in the general impact idea. When the comet was discovered in the spring of 1993 it had already split into about 20 distinct fragments, and backward projection of its orbit showed that the break-up had occurred on July 8, 1992, as the comet passed extremely close to Jupiter. Forward calculations soon showed that the fragments had been captured in Jovian orbit, and that they would return to Jupiter on about July 22, 1994. This time, however, a worse fate is in store for them: most will impact the planet at speeds of about 50 km/second. We do not yet have accurate measurements of the sizes of the individual fragments, but if the largest are a few kilometers in diameter, their energy approaches that of the Chicxulub impact on earth: tens to hundreds of millions of megatons of TNT. If there are any dinosaurs on Jupiter they had better look out!

What do we expect to happen when a cometary fragment several kilometers across enters the jovian atmosphere? It will initially flash into incandescence like a meteor, before plunging into the opaque clouds of Jupiter and disappearing from view. About 100 km below the clouds it will disintegrate and stop, in effect exploding with the energy of millions of large nuclear bombs. The resulting fireball will be hundreds of kilometers in

❖
Neo-catastrophism is being integrated into neo-uniformitarianism

❖

NEWS

diameter and brighter than the surface of the Sun. This fireball will rise, bursting upward through the clouds and carrying with it vast amounts of water vapor and other gases from the lower atmosphere. For about a minute this fireball will be brighter than the entire reflected light from Jupiter, before it fades and dissipates in the upper atmosphere.

Sadly, we will not get a very good view of these remarkable celestial fireworks. Every one of the cometary fragments is expected to impact on the side of Jupiter that is turned away from the Earth. Unfortunately also we have no spacecraft orbiting Jupiter to provide a close-up look: the Galileo Jupiter orbiter will still be 16 months short of its destination. However, Galileo will get a better view than earthbound astronomers. In addition, there may be significant changes in the upper atmosphere of Jupiter that can be seen from the Earth as the planet rotates to bring the impact sites into view. Virtually every telescope on Earth as well as the Hubble Space Telescope will be

turned toward Jupiter for the critical days around July 22 when the impacts take place.

Astronomers are excited about the impact, and the public is expected to share some of this interest. Such a collision is unique in our history, and it will likely be many centuries before we see another such event of this magnitude. Actually witnessing the collision of a comet with a planet is much more compelling than trying to reconstruct an impact event that took place 65 million years ago. The example of Comet Shoemaker-Levy will surely draw public and media attention to the role of cosmic impacts in the evolution of life on our own world as well. Thus nature presents us in 1994 with a good opportunity to underline the processes of biological evolution as well as the influence of the cosmic environment on the history of the earth. ♦

Astronomer David Morrison is co-author (with Clark Chapman) of the 1989 book *Cosmic Catastrophes*, chaired a 1992 NASA study of the impact hazard, and recently testified before Congress on this subject.

Cal Superintendent Follow-up

NCSE has followed the tribulations and literal trials of Bill Honig, former California Superintendent of Public Instruction. His successor was nominated by California Governor Pete Wilson, but she was rejected by the legislature. Honig, an outspoken advocate of evolution education, was ousted last spring as a result of his conviction on charges of conflict of interest.

Governor Wilson has nominated Sanford Sigoloff to the post, pending an election this spring. Sigoloff, who has no background in education, is a 62 year old businessman with a reputation as a business turn-around expert or corporate raider, depending upon whom is asked.

Sigoloff says he will not run for election in 1994 and pledges to work with teacher, parent and administrative groups during his short term. He pledges to turn around California school financial woes, but he has not made clear any specific proposals. His "corporate raider" image worries many observers.

Meanwhile, state school budgets languish in the wake of state economic troubles and state cuts in school aid. He may not be confirmed by the legislature, but the legislature may not be interested in confronting the issue before the spring election. The *New York Times* (11/19/93) reports that opponents of the just-defeated school voucher plan welcome his appointment, thinking he may forestall further voucher-plan efforts. ♦

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New
California
school super
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New Ig Nobel Prizes, 1993

The latest Ig Nobel Prizes have just been announced by *The Journal of Irreproducible Results*, whose current hide-out is MIT, an alleged university reputedly located in or about Cambridge, MA. A share of their exalted Medicine prize goes to the pioneering paper "Salmonella Excretion in Joy-Riding Pigs," by Paul Williams, Jr. and David Jacobs. The Prize for Literature goes to E. Topol, R. Califf, F. Van de Werf, P.W. Armstrong and their 972 co-authors for publishing a

medical research paper with ten times as many authors as pages. (Sorry—we've lost the exact reference.) The Committee also honors John Mack, Harvard Medical School, and Temple University's John Mack for their research conclusion that people who believe they have been kidnapped by aliens from outer-space "probably were." (But what about kidnappings by naturalized citizens or landed immigrants from outer space? Is subtle prejudice at work here?) ♦

Creationism in South Africa

**D.M. Maister
Schooling in Evolution
Project. Cape Town, SA**

A series of free lectures is currently being given in Cape Town (and probably elsewhere), evidently sponsored by some religious organization. "Creation science," so actively promoted in America, is the topic. Religious bookshops more and more are featuring books which promote creationism and ridicule evolution and science.

A few years ago, three "creation science" videos were shown on a [public] television religion programme. Complaints followed about the patently false information it put forward as fact.

During the apartheid era when the "information scandal" news broke, the public learned that great sums of money had been used to further the government's aims. It eventually appeared that some of it had been peeled off to bolster religion and discredit evolution. Anti-evolutionist material was circulated at the University of Cape Town. This author tried to track its author, and the trail led to a certain minister of religion who was never available but who was later mentioned in the press in connection with the scandal as having some shadowy part in it. ❖

Creationism Provides "Balance" for Public Television

Eugenie C. Scott

During the fall of 1993, a number of Public Broadcasting System stations aired a videotape, *Voices for Creation*. The 1-hour video was produced by the Marquette (Michigan) PBS station, WNMU-TV, and consisted mostly of footage from an earlier Jeremiah Films video, *The Evolution Conspiracy*, with added footage of Duane Gish and Richard Lumsden from the Institute for Creation Research.

In promotional material, the program was described as "a point of view documentary produced in response to increasing criticism of public television for its preceived (*sic*) pro-evolution stance." "The well-produced and heavily promoted PBS series *The Secret of Life* and *The Search for Human Origins* will undoubtedly renew the origins issue and bring pressure on PBS stations to present the creation viewpoint. *Voices for Creation* was produced for that purpose."

The video presented the usual creationist position that the evidence for evolution is poor and better corresponds with the special creation view of Biblical literalism, and it presented a young-earth view, with John Morris of the ICR claiming that laboratories that dated paleontological materials cooked their results to correspond with the previously-reported expectations of the researcher. Other misrepresentations of evolutionary science were presented such as the lack of transitional fossils, and mutations being "all harmful."

That such creationist nonsense was broadcast on public television is reason for concern. Most of us have higher standards for public television, and were shocked to see this video from such a source. This was not a national network show, but it was provided free to stations. Apparently, it was mostly smaller and less-well-funded stations that took advantage of the offer. Some showed it immediately following broadcast of *The Search for Human Origins* in March.

The Corporation for Public Broadcasting recently announced funding for a four-part series, *Scientific Creationism with Randall Balmer*. Randall Balmer is a professor of history at Barnard College specializing in religious history. He has been involved in previous PBS productions discussing fundamentalism. Some creationists have reportedly hailed this as a breakthrough, but from appearances, this series will be *about* creation science, rather than advocating it, as did *Voices*. Such a program, if produced intelligently, could help to educate the public about a serious controversy.

(PS: did anyone other than me feel ambiguously flattered over the choice of name of is video, considering NCSE's book, *Voices for Evolution*?!) ❖

The true scientist never loses the faculty of amazement. It is the essence of his being.

—Hans Selye

❖
PBS
"creationism"
series
planned
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NEWS

It's the Scopes Trial All Over Again!

John Cole

As NCSE members know, the Scopes Trial in 1925 did not put an end to antievolutionism. Fewer probably know that 1925 did not put an end to the Scopes Trial! John Scopes lost the case but didn't have to pay the \$100 fine because of a technicality; he went on to become a successful oil company employee, not a professional "cause," a role he rejected.

Dayton, Tennessee, where it all happened in 1925, now performs a reenactment of the trial for tourists each July. They have a summer festival including a live "docudrama" called *The Scopes Trial: Destiny in Dayton*—this year (1994) it's 21-25 July. The original trial transcript is used in the reenactment, not the widely-portrayed play and movie, *Inherit the Wind*, an openly fictionalized portrayal of the Scopes trial which many critics consider a fictional but aptly dramatized account of the trial.

Creationists heartily disagree and accuse the play and film of distortion. Many local residents say they resent having been portrayed as hicks in the play and film *Inherit the Wind*, a fictionalized treatment of the trial, and H.L. Mencken's depiction of them as the "Booboisie" and ignoramuses.

Their production is "designed to set the record straight," according to a report in the *Atlanta Journal and Constitution* (7/19/92).

The production is designed and coordinated by Bryan College—the fundamentalist college founded to immortalize William Jennings

Bryan, who died soon after the trial, diminished in the eyes of many of his populist admirers because of his antievolutionism and crude real estate hucksterism which obscured and diminished a long career of advocacy of causes ranging from social security legislation, anti-imperialism (read Bryan on the US role in the Philippines and WWI!)—I wonder if his Dayton defenders note his radical populist roots!

Bryan College was founded to honor his name and fame—for one, I hope it honors his iconoclasm, as well. Bryan was a rebel against Darwin, the Gold Standard, and many other issues, and frequently an opportunist, but he should not be remembered simply for his last crusade immortalized in *Inherit the Wind*—Bryan was much more complicated than that portrayal, although the play does capture the essence of the argument, I think.

Dayton and Bryan College seem to treat this as a melodrama—people are expected to cheer, boo, hiss, or peddle monkey souvenirs. Local artists, folklorists, and vendors of folk art are encouraged to partici-

pate. The scene of the reenactment is the original Rhea County Court House in Dayton, TN, on US 27, forty miles from Chattanooga and 80 miles NW of Knoxville.

Dayton also maintains a (free) Scopes Trial Museum (open year-round).

The festival includes traditional local arts and crafts, an antique auto show, local food booths, and traditional music and dance.

For further information about the "Scopes Trial Play and Festival" call Bryan College, 615-775-7500 or 775-7206. For further information about the Dayton tourist attraction, write the Dayton Chamber of Commerce or the Tennessee state tourist board. It should perhaps be noted that the original Scopes Trial was itself a major 1925 tourist attraction with street vendors, revivalists, etc. William Jennings Bryan used the occasion to advertise Florida real estate deals he was then promoting, and the trial was conceived of as tourist attraction taking advantage of the civil liberties issues, as various studies reveal.

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The
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Scopes
Trial was
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attraction.
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Creationism on the Internet

From the Internet computer network dictionary comes an interesting bit of computer jargon: Creationism: n. The (false) belief that large, innovative designs can be completely specified in advance and then painlessly magicked out of the void by the normal efforts of a team of normally talented programmers. In fact, experience has shown repeatedly that good de-

signs arise only from evolutionary, exploratory interaction between one (or at most a small handful of) exceptionally able designers and an active user population—and that the first try at a big new idea is always wrong. Unfortunately, because these truths don't fit the planning models beloved of management, they are generally ignored. [JRC]

Elvis Sighted on Noah's Ark: Looking at Tabloid News

John Cole

Supermarket tabloids are the pariahs of journalism—they sell millions of copies of sensationalized weirdness each week, but no one takes their Elvis, Bigfoot, Noah's Ark and Old Testament UFO sightings seriously, right?

Well, CBS Television has just announced two forthcoming "entertainment specials" based on the *Weekly World News*. If these work out, a series is possible. The shows will stress their unrelatedness to CBS News, we are told—a fine point which it will be interesting to monitor for effectiveness.

These tabloids pay huge salaries to writers to see how far they can go (seldom back to real journalism). Two interesting accounts of this odd world can be found in *Smithsonian Magazine* and a novel by Donald Westlake. The novel is *Trust Me on This* (NY: The Mysterious Press, 1988); the ethnographic article is "Tabloids: They Came From Outer Space!" by Sue Hubbell (*Smithsonian* 24(7), Oct. 1993, pp. 70ff.).

These sources are entertaining and informative tours of an alien culture where truth is whatever a publisher can get away with, and science is a sacred cow to readers and a laughingstock to editors ("Find me a professor to say something crazy!"). The public which laughs at them but gives them just a bit of credulity ("where there's smoke, there must be fire") often looks at "normal science" and "creation sci-

ence" through the same foggy lenses, evaluating claims a bit interchangeably. Interestingly, Adam and Eve, the Ark, and other religious archetypes are common tabloid fodder.

Experts say this or that, so you better believe—yet YOU are as smart as they are, and maybe this makes you a co-expert or even someone fit to judge the Experts with contempt because you know what's what, even if you're not in Who's Who. Professor Phuddy Duddy produces quotes (typically a pseudonym or fake source willing to claim on tape to be a "professor of evolutionary archaeology" or somesuch nonexistent field, but sometimes also an actual scholar with a sentence ripped out of context by an interviewer claiming to be from anything from the Nobel committee to the County Sheriff). An "enquiring mind which wants to know" can usually get a lurid quote from almost anyone—or at least the fact that "Professor Einstein refused to comment on Noah's Ark in a recent seance—is he still stonewalling this investigation?"

The technique may seem a caricature, but it follows eerily close to the pattern exemplified by too many "scientific" creationists.

Sober-sided creationists will be appalled at the comparison, but there it is. And some of the authors are even literally the same folks who bring you fringier creationism. The lurid, apocalypse-soon people capitalizing upon the fear-of-the-week club are parodied deftly and affectionately by Westlake and described with a bit of affection by

Hubbell. If you're interested in popular culture and in drawing comparisons with broader aspects of anti-science, take a look and ask yourself how *The National Enquirer* or *Sun* relate insidiously to the attraction to scientific creationism. ♦

California Rejects Voucher Plan

John Cole

In the November election, California voters rejected the proposal for "vouchers" (13(3)) to pay for private schools.

The defeat was almost two to one, but critics claim it was based on the fact that the proposed plan was too extreme, not basically wrong. The plan would have not only stripped public schools of financial resources, but it would have provided them to schools which voters felt nervous about supporting—from religious schools to schools set up by "witches" or other unpopular alternative beliefs. The education establishment exploited this fear via a massive media campaign.

Somewhat lost in the election coverage was the fact that most people rejected vouchers because they favored public education and opposed tax support for religious and other private schools. However, people were very strongly interested in improving education.

Voucher proponents pledge to be back soon with a less radical proposal with the same goal of supporting religious education. ♦

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Mad or
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scientists—
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NEWS

Reviews of Numbers' *The Creationists* (and a Good-Looking Australian Journal)

John Cole

A "Review Symposium" consisting of several book reviews and a reply by the author Ronald L. Numbers appeared in Issue Three of an Australian journal, *Metascience*. The journal describes itself as "An International Review Journal for the History, Philosophy and Social Studies of Science," featuring an "Essay Review, Review Symposium, Korn's Column, Reviews, and Notices of Books."

Pages 41-64 of the journal consists of reviews by Christopher P. Toumey (Raleigh, No. Carolina), Tim M. Berra (Ohio State University), David Oldroyd (New South Wales), and Dorothy Nelkin (NYU), and a reply by Numbers. Numbers applauds Toumey and is less thrilled with his other reviewers. The composite review, however, provides a useful way to examine an important book without relying on one, possibly quirky, opinion. Unfortunately, the journal seems to have been slightly arbitrary in its selection of reviewers; for example, the longest review, by far, is by an Australian who is largely amazed by the whole matter. Toumey and Berra, while disagreeing strongly, exhibit the best command of the issues involved.

NCSE's Cole, Godfrey, Feder, Harrold and Scott are identified by one reviewer as debunkers, with McIver, Toumey and Michael Cavanaugh cited as more

"ethnographically" oriented in their approach to creationism. We're all NCSE colleagues in one way or another, I should assure Professor Numbers—there's room for differing approaches!

Metascience is published by the Australasian Association for the History, Philosophy and Social Studies of Science; sub-

scriptions are \$25/yr (Australian) for two issues, \$50 for institutions. Write Dr. David Miller, School of Science and Technology Studies, University of New South Wales, Kensington, Sydney, Australia NSW 2033, Australia; FAX 61-2-692-3329. (Note: I've only seen this one review section, but the journal looks excellent on this basis.) ♦

Creationist Prof Suspended

John Cole

As we go to press, news arrives of a part-time instructor at Wright State University in Dayton, OH, suspended from teaching his biology class because of student complaints that he was teaching creationism. Dan Scott was suspended with pay after allegedly telling students God held atoms together and assigning a paper which required students to discuss whether creation and evolution could co-exist. Many students complained that he diverged so far from a normal biology intro course that they would not be prepared for advanced courses. Some students defended him, however, as an enthusiastic teacher.

Before the course began, he was given a written warning by the department head about letting his religious beliefs interfere with his teaching—a very odd prelude to hiring someone for a part-time course. Scott holds a Master's degree in plant breeding. He also teaches three courses per term at

nearby Clark State College, according to news reports. Pat Robertson's television network and the Family Research Council have taken up this situation nationally, which suggests that a lawsuit is planned over this instructor's academic freedom and religious rights. Dayton has been the scene of other creationist activity recently. NCSE will keep you posted. ♦

Computer Bulletin Board:

To call the NCSE-FREENET computer bulletin board use the number (216) 368-3888 via modem, or use Gopher and the Internet at Cleveland Freenet. They post NCSE info and have a vast, free system of computer services and information. They can now handle up to 70 calls and 300 users at a time, so an earlier bottleneck problem should be improved.

Vatican Assails Biblical Literalism

Biblical literalism is a form of "intellectual suicide," according to a 125-page document released in March by the Vatican. "The Interpretation of the Bible in the Church" was written by Pontifical Biblical Commission, a group of scholars appointed by the Pope. Literalism, they say, "refuses to admit that the inspired word of God has been expressed in human language... by human authors possessed of limited human resources."

One commission member, Father Joseph Fitzmyer, was quoted by Reuters News as saying that fundamentalists failed to recognize that years passed between the time Jesus spoke and the time when the gospels were written. "There was no stenographer, no one with a tape recorder on at the time." He added that one of the dangers posed by the burgeoning literalist movement was that converts first seize upon the new simplicities with enthusiasm but then grow disillusioned and "throw everything overboard" when the logical flaws become clear.

The study was also rather critical of feminist and liberation theology approaches to studying Scripture, although it concluded that they—along with semiotic and psychoanalytic approaches—can make useful contributions to scholarship.

The Roman Catholic Church has felt considerable membership erosion, especially in Latin America where fundamentalists are very actively seeking converts. Perhaps we missed it, but we did not see this story in any newspaper; it was covered in two different wire service stories.

Lewis Thomas Dies at 80

Lewis Thomas died in late fall of a disease of the blood which produced an abnormal proliferation of lymphocytes. Thomas was aware of the irony, having spent a life rich in accomplishment as a doctor, medical researcher and writer concerned with the nature of cells. His best-known books were *Lives of a Cell* and *The Medusa and the Snail*.

Thomas was a popular medical philosopher who did much to explain medical research to the public—and to popularize with concrete examples Darwin's oft-quoted observation that we living creatures "are all one." Thomas could ask with puckish humor whether he was taking a walk in the park, or whether his cells were using his body to fulfill their own biological needs. (In this he was a bit more holistic than Richard Dawkins, popularizer of the "selfish gene!") Chet Raymo, in the December 27th *Boston Globe*, quotes his comment that "We are shared, rented, occupied" by our trillions of cells. Such comments out of context could be seen as anthropomorphizing—attributing human motives, thought,

and faculties to cells, but in fact he argued strongly against this basic idea, using the format to advance his ideas about the evolutionary and ethically neutral nature of life while advocating strong ethical standards for biologists and doctors. "The thing we're really good at as a species is usefulness," he wrote. He passionately argued that we should always try to make a difference for the better.

His matter-of-fact description of his own dying process was captured in a long interview from his hospital bed by Terry Gross on her NPR program *Fresh Air* and a more recent *NY Times Magazine* article by Roger Rosenblatt. Lewis even had good things to say about the impersonal treatment hospital patients receive, understanding the pressures on doctors and nurses as well as on patients and their families. He died feeling optimistic about the human race and the fact that his remains would have a useful place in the Earth's biological cycle which, more than his writings, would make him immortal.

John Cole

What Color Are Your Purines?

A California high school biology teacher, Jim McCammon, is marketing "DNA Earrings" made of beads of various colors. The earrings sell for \$5 (add \$1 for shipping) and can be ordered from McCammon at 695 Pine Avenue, San Jose, CA 95125. You can specify what color beads you want for the purines and the pyrimidines,

and even the sugars and phosphates. Your NCSE director bought a pair at a science teacher conference and thinks the black and silver combination is spiffy, but everyone to his/her own taste. They generated many comments among the cognoscenti. Sold in pairs only—cheapskates can't buy one and wait for it to self-replicate.

Kenyon con't from p. 5

assess Kenyon (based on counsel of the dean and individual faculty members).

In light of this lack of due process, the AFC recommended that Kenyon be reassigned to teach Biology 100.

Hafernik declined to reinstate Kenyon in the class during either the fall, 1993, spring, or 1994 semesters. This caused Kenyon to request that the full Academic Senate review the situation, with the hoped-for outcome that Hafernik and the department would be forced to reinstate him in Biology 100.

On Dec. 7, 1993, the Academic Senate voted to uphold the AFC decision directing Hafernik to allow Kenyon to teach the course. Kenyon has been assigned to teach Biology 100 during the summer session of 1994.

The position of the department must be made clear. Most consider this a staffing decision, beyond the necessity of university oversight. Kenyon was prevented from teaching ideas outside the realm of science in an introductory biology class where students are not sufficiently prepared to understand why he is in error. He should not, they say, teach students insufficiently prepared to understand why he is in error or to argue in free debate. He may teach "intelligent design theory" in graduate courses, or in advanced courses for biology majors. The restriction was limited to this one non-majors introductory course, not the widely-publicized "muzzling" of an unpopular view.

In February, 1994, the Department of Biology voted to adopt a "Resolution in Support of Appropriate

Curricular Standards" which included a statement in support of academic freedom. It also stated, "The Department of biology has the responsibility for maintaining both the highest standards of scholarship and the accuracy of material presented in its classroom; and there is no scientific evidence to support the concept of intelligent design; therefore be it resolved that we hold that the design view is not scientific."

This statement may be seen as a step towards the department developing procedures to evaluate

❖ A lack of clear and due process ❖

the content of its instructors' classes, part of the due process recommendation of the AFC. Kenyon's class this summer will also be evaluated. University of California law professor Phillip Johnson, author of the antievolution book, *Darwin on Trial*, has been a supporter of Kenyon's throughout the controversy. Johnson's legal specialty is criminal law, and he is a skilled, combative litigator. Should the Kenyon/SFSU case eventually result in a lawsuit, it is intriguing to speculate whether Johnson's legal rather than scientific abilities would be called upon.

The issue raises important questions of academic freedom. Court decisions already limit the academic freedom of K-12 teachers:

they must teach the curriculum of the district for which they work. University teachers are less constrained: some say they are not at all constrained. But the 1991 case of *Bishop v. Aronov* suggests academic freedom is not unlimited at the college level, either, with peer evaluation of competence a relevant issue. Phillip A. Bishop is an assistant professor of physical education whose course in physiology included references to what would today be called "intelligent design." He also offered an optional "Christian Perspectives" class for students. The classic tension between the two First Amendment clauses of free speech and establishment of religion arose. The Appeals court came down on the side of the "establishment" issue and directed Bishop to cease proselytizing in class.

NCSE supports academic freedom and the right of college professors to dissent (and defends school teachers' rights to diverse viewpoints but not the right to religious proselytizing, but there is also a peer-review issue which dictates that, for example, Marine Biology not devote its class time to archaeology (a real case, by the way) and an assumed competency rule does in fact hold college professors to minimal standards.

Academic freedom is important, but it is not *carte blanche* to teach religion in a physics class, and it never justifies breaching the wall between government and establishment of religion. We will keep you posted about legislation, issues and arguments trying to entangle creationists with science education. ❖

❖ Academic freedom vs. responsibility ❖

TRACKING THOSE

Odds Are That Too Few People Understand "Chance"

Kent Harker
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In nearly every creation/evolution debate I have heard or read there is a recurring theme: chance. The opponents of evolution exploit this theme at every opportunity—very effectively, we must admit. They emphasize with modifiers like “random” to drive home a sense of purposelessness. Then they like to soften the target a little more with another powerful and misleading modifier: “pure.” How many times have you heard a creationist spout that evolutionists want us to believe that *pure* chance is responsible for the awesome complexity of life on earth?

This gambit is compelling on an emotional level. There is something in humans that cries out against the notion that what to us appears truly miraculous could “just happen.” The senselessness of “pure chance” makes most wince and feel as though life is devoid of any significance, so it is natural that the public is hostile to what it mistakenly believes is evolutionary theory. We hear repeatedly that “it couldn’t just happen.” The best answer is that it *didn’t* “just happen.”

We must confront such misunderstandings of evolutionary biology. The problem is exacerbated when many scientists state, in one way or another, that chance is indeed the author of life. These professionals understand what is meant by the word *chance*, but they usually are not careful enough to see that those

who read or hear understand as well.

First we need a mathematical definition of *chance*, for the term is a mathematical one. It is a synonym of *probability* (James, 1977). (Mathematicians prefer to avoid the word “chance” because of its popular usage.) When one says: “What is the chance that . . .,” one is posing a probability problem. Since it is a probability problem, it must be answered mathematically. Few, especially the creationists, are familiar with even the basic propositions of probability theory. If we are to offer some light we must ourselves develop fundamental understanding. Second we need a formal definition of *random*. Random means *equally likely*.

Here I must insert a slightly technical clarification of “equally likely” that an example will best illustrate. In a container of twenty balls, one of which is white and the others black, the likelihood of choosing a white ball is not equiprobable, but choosing a ball of *any* color is the same (1/20) if the balls are otherwise identical. Without this uniformity—randomness—we cannot speak of the probability of choosing a black ball as 19/20. If there is a variable or operant that makes an unequal likelihood the sample is not random. If a pollster were to draw a *national* conclusion about the morality of homosexuality from a sample of fundamentalist Christians we would object that the sample was not representative, i.e., not random.

We are getting closer to the crux of the problem, this question of ran-

domness. Focus the thinking a little finer with another example: Suppose we have fifty quarters that we dump from a jar onto a table. We count and record the number of heads and tails each time as we repeat the experiment 100 times and find that the occurrence of heads was 56.3%. What may we infer? That heads is more likely when we use quarters? Hardly. We need first to know how unlikely it would be to have 56.3% heads in 5,000 trials. For that we resort not to the quarters, but to probability theory, which provides us with means to compute such a probability *if the sample was truly random*. The mathematics tells us if we are justified to look for symptoms of nonrandomness, not that we have discovered a new property of quarters. Armed with information that the 56.3% outcome is sufficiently unlikely to have been random, we examine each quarter for some nonrandom bias—perhaps minting flaws or uneven wear that weight some of the coins in a biased manner. It is critical for us to keep in mind that no matter how unlikely the 56.3% may be, it does not constitute *proof* that the sample is nonrandom. Also, note that at no time would we posit a paranormal or supernatural rationale solely because our outcome is however unlikely. To do so is to commit yet another logical fallacy: a false dichotomy.

With an understanding of randomness we are ready for the next step. What happens if we apply random probabilities to what we *know* are nonrandom samples? Well, it is perfect nonsense. Then why don’t we point this out to the opponents

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“pure chance”
sounds
pejorative—
“purposeless”
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INCREDIBLE CREATIONISTS

of evolutionary theory when they use arguments that do precisely this? As important as this is—understanding the requirement of randomness in the sample—there is something even more fundamental: we must know the *initial conditions* of the sample set. What would we think about an investigator in a frenzy about the outcome of a coin-tossing experiment in which a string of 100 successive heads occurred when he or she did not check to discover that the coin had heads on both sides? The degree of uncertainty in the initial conditions will multiply the degree of uncertainty in any conclusion one deduces.

Now let's apply these two principles—randomness and surety of initial conditions—to the question of the origin of life. Do we know what were the initial conditions five or ten billion years ago? Does it make any sense to talk about equiprobable (random) variables acting through all systems in all time? Creationists consistently abuse and misunderstand these two fundamental principles. Their probability "computations" about the likelihood of a DNA molecule happening by "random chance" are dead in the starting gate because they assume, for example, that H_2O is just as likely as O_2H and that there were essentially no initial conditions that would make it more likely for the production of carbonic acid than sulfuric acid. The laws of chemistry are at work here, and those laws preclude the random association of atoms; chemical compounds form only in certain, specific ways, greatly favoring some compounds over others, depending upon conditions. The mistakes creationists make here are not just stupidity, they are high-handed stupidity. Almost all the variables operating in biogenesis and evolution are clearly nonrandom. Even in muta-

tion there is some evidence that certain pathogens have a mutating mechanism in their DNA that is triggered by the presence of lethal conditions, i.e., they seem to be able to "mutate" their way out of a potential extinction.

The foregoing discussion is the very reason that some evolutionary biologists make a careful distinction between biogenesis and evolutionary theory. The latter *assumes* the existence of life in some rudimentary form and theorizes how it has diversified with time. In truth we scarcely have a clue how life might have begun; research in that area is in its infancy, and I don't think there will be much credibility to the theories until we are able to produce something like a self-replicating molecule in a laboratory setting. Creationists love to exploit the relative weakness of biogenesis hypotheses by including them with evolutionary theories to dilute evolutionary theory. This is a simple but effective logical fallacy (guilt-by-association), and it disturbs me that we so rarely call them on it.

Third, there is the matter of *pure* chance, yet another point on which few debaters confront their creationist opponents. Who says that chance is the *only* factor in the outcome of descent with modification? Certainly not evolutionists. In fact, I challenge anyone to find a *single* evolutionist who teaches that chance alone is the driving mechanism of evolution. Evolution has many, many factors operating other than chance. The laws of chemistry and physics are also at work here, and who in his right mind supposes that those laws operate by chance alone?

When discussions of probabilities arise, there is one last problem that

I must address: *post hoc* ("after this") probabilities, those computed *after* the fact. Of all the nonsense analyzed in the foregoing, the crowning nonsense is the post-hoc probability. At a debate I attended I asked the audience to do some mental arithmetic estimates. I asked each to imagine the probability, starting before birth, that he or she would be there in San Jose, in that building in that specific seat at that precise time. Then I asked each to add to that incredible unlikelihood the fact that all the rest of the individuals had estimated a probability, and to now combine those probabilities to see the grand picture that had us together in time and space. This post-hoc probability is so minuscule that some unseen force could compel itself upon us as an explanation. The point is they were all there for a *reason*, not as a random event, so assuming randomness after the fact is reckless disregard for the truth. For another example, suppose, after having been dealt a bridge hand you decided to call the Guinness people because that hand has a probability of less than one in 653 billion. Your cardmates would think you mad. *Every* hand has that same (unlikely) probability, and it is only significant if you call the hand *before* the cards are dealt and then get that exact hand. Creationist's DNA probability computations are *post-hoc* probabilities. Post hoc, anything goes.

The opponents of evolution commit all of these errors, and they do it in spades. Let's see that we put a stop to it by painting their mistakes red with the fraud that they are.

(Ref.: James & James. *Mathematics Dictionary*. Van Nostrand, 1977)

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Probability "computations" about the likelihood of a DNA molecule happening by "random chance" are dead in the starting gate because they assume, for example, that H_2O is just as likely as O_2H .

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TRACKING THOSE

Ancient Dinosaurs from Alaska's North Slope

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 Berkeley

“**F**resh dinosaur bones found” trumpeted the misleading headline of a recent news release. The author, Margaret Helder, Ph.D., science editor of “Reformed Perspective,” was not describing the discovery of the fresh remains of last night’s turkey or chicken dinner. This is a valid interpretation of the phrase “fresh dinosaur bones.” These and other birds are now known to be closely related to ancient dinosaurian carnivores, such as *Tyrannosaurus rex*, and are properly recognized as a subgroup of the dinosaurs. Dr. Helder, however, was editorializing about the discovery of the **little modified** bones of duck-billed dinosaurs (hadrosaurs), ceratopsians (forms related to *Triceratops*), as well as several different kinds of carnivorous dinosaurs found in Alaska. There is a world of difference between the meanings of “fresh” and “little modified.”

The bones of contention were found in rocks now exposed in the banks of the Colville River on the Alaskan North Slope just a few miles south of the Arctic Ocean. Dr. Helder’s claim that these little modified bones from Alaska are “fresh” and demonstrate that dinosaurs (other than birds) lived only a few thousand years ago is based on a long-recognized false premise. The degree of modification of the remains of prehistoric animals is not directly and tightly correlated with their antiquity.

Preservation of bones of ancient animals is a complex process². Although soft tissues decay rapidly after death of an individual, its bones, formed of the mineral hydroxyapatite, are relatively stable tissues. Discoveries of remarkably well preserved skeletons found deep within caves demonstrate that if protected from wind, rain, or chemical attack vertebrate bones can remain essentially unaltered for many tens of thousands of years.

Natural burial of an animal’s skeleton, being covered by the mud deposited by a flooding river, for example, provides additional protection against destructive attack by the elements and opens the door for preservation of the bones by permineralization. Permineralization is the name given to a variety of processes that result in the deposition of minerals in cavities within ancient bones or, at the extreme, replacement of their hydroxyapatite structure by other minerals. It is the result of ground water percolating through the bone. Usually minerals in the ground water either simply stain or crystalize within porous areas of the bone. In some instances the original hydroxyapatite formed during the life of the animal is replaced by other minerals. Rarely this replacement appears to have occurred at a molecule by molecule basis so that images of minute passages or other structures of the bone are preserved.

The rate at which permineralization occurs depends on a variety of factors. The kinds and amounts of minerals in the ground water make a difference as does the rate at which this water percolates through

the bone. Anyone who has the opportunity to collect fossils of the same age in different areas quickly realizes that the kinds and degrees of permineralization can vary greatly. These differences reflect the different histories of ground water composition and circulation.

In 1961 Robert L. Liscomb, a geologist working for Shell Oil Company, discovered dinosaurian bones weathering out of rocks forming steep banks along the Colville River near a bluff called Ocean Point on the Alaskan North Slope³. Two geological formations are exposed in the cliffs along the river. The upper part of the cliffs are formed of sands and clays of the Gubik Formation that was formed during and just before the Ice Age (Pleistocene). Gubik sediments were deposited about a million or two million years ago. They contain the remains of a variety of different animals. Bones of mammoths are not uncommon.

The sands and clays of the Gubik were deposited on the eroded surface of the underlying Prince Creek Formation, which contains the remains of a variety of different kinds of dinosaurs. This eroded surface is evidence of a long period following deposition of the Prince Creek when either new sediments were not deposited or were deposited and subsequently destroyed by erosion. We now know that this eroded surface represents a gap in the rock record of more than 65 million years duration.

On the Alaskan North Slope the bones of Ice Age mammals and those of dinosaurs that lived over

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 The fossil
 excavator
 replies to
 distorted
 interpretations
 of his work
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INCREDIBLE CREATIONISTS

65 million years earlier are roughly similar in mode of preservation. In both deposits the soft tissues of the animals' bodies have been lost by natural decay. The bones are stained a dark brown color, probably the result of iron compounds in the ground water. Otherwise the much younger mammalian bone and the dinosaur bone have been little modified. The conditions for rapid permineralization, an abundant supply of mineral-rich ground water, did not occur on the Alaskan North Slope. Although these bones are little modified they are long past what could be reasonably called a "fresh" condition.

Three lines of evidence establish the great antiquity, an age of some 70 million years, of the Alaskan dinosaurs. The kinds of dinosaurs found in Alaska are the same species or closely related to species found in Alberta and areas to the south. This resemblance allows the Alaskan dinosaurs to be fit into the history of evolution of the North American fauna that is much better documented at these lower latitudes. Likewise, the remains of plants found in the same rocks with the dinosaurs represent kinds that can be shown to have become extinct some 65 or more million years ago⁴.

Finally, two kinds of radiometric age determinations, the so-called potassium-argon (K-Ar) and the argon-argon (⁴⁰Ar/³⁹Ar) methods, have been applied to volcanic ashes that were deposited during the time that dinosaurs lived on the North Slope. Both methods give concordant results indicating that these volcanic ashes were erupted some 70 million years ago when dinosaurs lived on the North Slope.

Paleontologically the exciting result of the discovery of dinosaur bones on the Alaskan North Slope is what it reveals about the levels of environmental tolerance of some species of dinosaurs. It clearly shows that dinosaurs were able to live at high latitudes, about 80° N. latitude, some 70 million years ago. At that time, the latest Cretaceous, the world's climates were much warmer. The associated fossil plants indicate the Alaskan North Slope had a cold temperate climate apparently characterized by winter frosts but not long periods of freezing. At least some species of dinosaurs were able to tolerate this cold environment as well as long periods of winter darkness.

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Creationism at the Back Door

John Cole

In my own district's October election to fill a vacancy in the state House of Representatives, Democrat Steven Kulik defeated Republican Edmund Smith who had questioned the continued teaching of evolution in public schools. Kulik becomes the first Democrat elected in the district since early in the century. He had considerable Republican support—including losing opponents of Smith in the earlier primary election.

Smith had campaigned on a familiar religious right platform beyond the creationism issue. The *Daily Hampshire Gazette* (11/13/93) quoted a refreshing comment from the losing candidate. He said he got his views across to people pretty well, and they didn't buy them. "The truth of the matter is," Smith said after the election, "we don't represent the mainstream." Hats off to Smith who did not run as a stealth candidate and lost with grace rather than bitterness.

On the other hand, only about 22% of registered voters bothered to vote, and a more devious candidate could have exploited that level of apathy. ♦

TRACKING THOSE

Revenge of the "Mammal-like Reptiles"; or, Night of the Living Ancestors

Kevin Padian

One of the real coups you can pull in paleontology—and there aren't many fields left where you can do this on a regular basis—is to start a lecture with a premise that everybody agrees on, and at the end you pull out a new fossil that nobody has seen before that overturns everything that everyone knows. This is great fun for everyone, but the bigger fun comes later, when it comes time to resolve the mystery.

One such case happened at the 1990 meeting of the Society of Vertebrate Paleontology in Lawrence, Kansas. Dr. Richard Fox, an eminent paleo-mammalogist at the University of Alberta, unveiled a small toothed jaw that set the audience on its collective ear. It was not so much the features of the jaw itself—those were typical of a garden-variety mammalian relative from the Triassic. The only problem was that this jaw was found in the Paleocene, some 150 million years later. And that's where the problem began.

Dr. Fox is no slouch when it comes to early mammals; in fact, he's one of the world's experts. There was no question about the age of the deposits in which the tiny jaw was found. So how is it that a mammalian precursor could survive in the middle of North America for 150 million years and never be detected in the fossil record?

Dr. Fox (1992a) published a report on the unusual jaws in *Nature* along

with Gordon P. Youzwyshyn and David W. Krause. The specimen has a strange mixture of characters of mammal relatives. The cheek teeth (molars and premolars) have a single roots, like the teeth of all non-mammals, but there are several cusps on the crowns, like the teeth of mammals and their relatives. Occasionally reptiles have several cusps on their teeth, but reptile jaws don't have large coronoid processes, like this jaw; that feature is only found in mammal relatives. The enamel is pseudoprismatic, a fairly general character in vertebrates, including many mammals. And the lower jaw has a series of bones that identify it as a mammal relative.

At this point, the paleontological community is collectively scratching its head over the puzzle (the new specimen was dubbed *Chronoperates paradoxus*, or 'paradoxical time-wanderer'). Either the identification is mistaken, or the jaw was washed in from an earlier sediment, or a group of mammal precursors survived a great deal later in time than anyone has suspected.

The new find has not escaped comment. Dr. Michael Novacek, Dean of Science at the American Museum of Natural History in New York, and a pre-eminent mammal paleontologist himself, commented in *Nature* (*ibid.*, p. 192) that the dentition showed only 'subtle' differences from those of Late Cretaceous symmetrodonts; still, the other features do not match up well. Why then, he asked, have so many small mammals been found from these Paleocene deposits without

encountering anything like *Chronoperates* until now? Fox *et al.* suggested that the diversity of mammal relatives might have decreased drastically once mammals evolved, so we might not be likely to encounter them. Dr. Hans Sues, of the Royal Ontario Museum in Toronto, suggested in a later issue of *Nature* (1992) that the jaw and teeth were not like any non-mammal group, and that perhaps more material should be sought before a classification is attempted. Fox *et al.* (1992b) responded that neither they nor Sues could establish the taxon as mammalian, and rested on their earlier case that *Chronoperates* is a survivor of a lineage of mammalian precursors.

As Novacek noted, this kind of controversy is what sends paleontologists back to the field for a second look. However, there is a bit more to clarifying the terms of the debate. First is a matter of terminology. Fox *et al.* referred to their new find as a "mammal-like reptile," a conventional term from the days when every tetrapod was divided into amphibian, fish, reptile, or bird, every amniote that wasn't a bird or mammal was a reptile, and reptiles were supposed to have given rise to birds and mammals. Hence "mammal-like reptiles" were those reptiles that were on the road to being mammals, but not quite there yet.

The advent of cladistic terminology has changed this picture, and despite some initial confusion of terms, winds up making the whole picture clearer. The first tetrapods diverged into two major branches, one leading to am-

INCREDIBLE CREATIONISTS

phibians and the other to amniotes (which evolved an amniote egg). From among a nexus of early amniotes, two major lineages diverged. One is the reptiles, which split successively into lines leading to turtles, lizards and snakes, crocodiles, and the dinosaurs; birds evolved from dinosaurs. The other lineage, called the synapsids, led to the mammals; but this lineage was never reptilian, so it is a misnomer to call any mammal relatives "mammal-like reptiles." (It's less confusing to call them synapsids.) The early synapsids included the familiar fin-back forms *Dimetrodon* and *Edaphosaurus*, often called reptiles in children's books or included in bags of plastic dinosaurs. Synapsids with more upright posture, shorter tails, bigger cheekbones, and more derived dentition are called therapsids, and it is from within this group that mammals evolved.

The first critters that have the common mammal features of multiple-rooted cheek teeth with several cusps, a jaw joint formed of the dentary and squamosal bones (rather than the articular and quadrate bones), and three small bones in the ear that used to be involved with the jaw joint, show up in the latest Triassic, about when the dinosaurs evolved. Representatives of the living groups of mammals, such as marsupials and placentals, are found several million years later, in the Jurassic Period. Most of the non-mammal groups disappeared by the end of the Jurassic, so the discovery of *Chronoperates* in the Paleocene, which postdates the Cretaceous, is a real surprise.

A second problem in resolving the *Chronoperates* question is

that scientists are not in agreement on how to identify a mammal, especially in the fossil record. Living forms, even the platypus, have posed no problem for classification, at least since the 1840s. But many fossil forms have some, but not all, features of living mammals. So the question is, when is a mammal not a mammal? Some paleontologists suggest confining the term "mammal" to the living groups and all fossil forms that are descended from their most recent common ancestor. By this criterion, only legitimate monotremes, marsupials, and placentals would be included as mammals. This focuses the criterion on descent, not on the possession of any single feature or combination of features apart from those found in mammals today. Other proposed criteria focus on features or combinations of features, but these are more arbitrary to critics. Besides, when you find forms like *Chronoperates*, the definitions tend to destabilize. (A recent discussion of this problem by Spencer G. Lucas (1992) and Timothy Rowe and Jacques A. Gauthier (1992), in the journal *Systematic Biology* is a good summary; for other views, see Ahlberg [1993] and Forey [1993].)

So, the discovery of *Chronoperates* brings up some basic and fascinating questions. What is a mammal? How should we best define groups of organisms? How do we treat problematic fossils? And what does this new discovery mean? One thing it does not mean is that the whole world of paleo-mammalogy is turned upside down, and nothing is certain anymore. At most, we may find that a lineage of non-mammalian therapsids survived sev-

eral million years longer than we thought. Or, it could be that this little critter turns out to be a mammal after all—maybe a weird one, or just a young one. Or, maybe it will turn out to be a wash-in from older sediments. Time may tell; it often does. However, one caution is not to make too much too soon from a single specimen. If there's something to this story, we should be finding more specimens of this odd little beast.

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TRACKING THOSE

ICR's "Whale" of a Tale

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In the past few years it seems that many *ICR Impact* articles have been religious, philosophical, or political in nature, even though they are advertised as scientific and technical. Of course there isn't any way to judge those articles as right or wrong in the light of science. They are just opinions, and most everyone has opinions about almost everything.

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Whales
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of the
creationists'
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cases
❖

On the other hand, "When is a Whale a Whale?" (*Impact* 250, April 1994) by Duane Gish will definitely be one that Frank Awbrey and I can use in our course on creation and evolution. It is much like the early *Impact* articles in that it has the critical omissions, temporal slight-of-hand, non-sequiturs and illogical conclusions that we grew so fond of during the early days of our studies into creationism. Just off the top of my head, here are some of the critical omissions:

(1) Whales have four-chambered stomachs. Only ungulates and whales have such stomachs. The four-chambered stomach is a wonderful adaptation for an animal that lives on a high cellulose diet. It permits "chewing of the cud," a process that breaks down cell walls that would not be broken during normal chewing. Also a rich microbial culture can be maintained in the stomach. This allows the ungulate to take advantage of microbially-manufactured cellulase, thus deriving sugar from the otherwise indigestible cellulose. Modern cetaceans, on the other hand, never eat

cellulose. Their diets consist of easily-digested proteins. There is no need whatsoever for the four-chambered stomach, yet there it is. It looks like a vestigial feature to us.

Creationists will just have to say that the stomach shape in whales must be there for some good reason that isn't immediately obvious and maybe someday someone will understand its purpose, and maybe not.

(2) Then there are vestigial hind "legs" that have been discovered in a few sperm whales. Most sperm whales get along famously without even a trace of hind legs. When the "legs" are found, they usually consist of only a bone or two. Often the "legs" don't even raise a bump on the outside of the body. These "legs" are not a very popular feature with sperm whales, and one can easily understand why. For one thing the "legs" are completely useless. The whales can neither swim nor walk with them. And the "legs" are literally a drag when they are so large as to cause protrusions on the outside of the body.

The "legs" certainly are not tumors the way Gish says human tails are. When found, the "legs" are on both sides of the body and some even have a recognizable femur, tibia, and fibula. Tumors, excepting teratomas, perhaps, are never that differentiated. Evolutionists think that these little "legs" are vestigial features. Creationists will just have to speculate that they are not really legs at all, but just features that some sperm whales have, the use of which will probably have to remain unknown. "God works in mysterious ways," they will sigh.

(3) Then there is the skull of a toothed baleen whale sitting down in the Natural History Museum in Balboa Park. I guess it has been described in the literature, at least briefly. This creature retained its teeth into adulthood, yet there is clear evidence that it also had baleen. This toothed baleen whale is just what any red-blooded evolutionist would expect as a transitional form between the toothed and baleen whales. In fact such an intermediate is almost certainly required for the switch.

For creationists the toothed baleen whale is just an extinct form that had both teeth and baleen. I think they're going to have to be quite creative when it comes to thinking of a good reason why the toothed baleen whale could not be another transitional form.

(4) And how about the fetal teeth that are reabsorbed before birth in modern baleen whales? The readership of "Students for Origins Research" tried to tackle this one. To Frank and me it seemed that the best reason anyone could come up with was that fetal whale jaws must need teeth for some reason that we don't understand yet. Apparently the creator just couldn't figure out how to make a jaw that didn't have teeth, at least while the jaw was part of a fetus.

The nasty godless evolutionist, the godless evolutionist, and the church-going evolutionist all regard these fetal teeth as vestigial features. If they are vestigial features, they are strong evidence for evolution. Whether or not they are vestigial features, they say nothing about the existence of God.

INCREDIBLE CREATIONISTS

For temporal slight-of-hand, I think the 1955 quote from Colbert is a good example. There have been several significant discoveries of possible intermediates since that time. Whales no longer seem to be a group of related species that sort of pops up in the fossil record without apparent ancestry. Oh yes, there still are groups of organisms like the pterosaurs that still *seem* to appear "fully-formed" in the fossil record, but whales no longer are a good example of such a group. Creation-

ists are making themselves look silly by continuing to push the whales as a group that has no obvious fossil ancestry relating it to other groups.

As far as non-sequiturs and illogical conclusions go, the whole article seems to be a good example. As I understand its thesis, Gish says that *Ambulocetus* could not have been a whale ancestor since it looks so intermediate and that it could not be an

intermediate since it looks so much like a land-dwelling ungulate that was adapted for swimming! Also, the claim that *Ambulocetus* was related to the carnivores is completely unsubstantiated in the *Impact* article—what carnivore ever had feet that resembled hooves? To my mind, an ungulate that looks like it had feet adapted for swimming is a very good possibility for an intermediate between land-dwelling ungulates and whales. ♦

Wall Street Journal Letter

Eugenie C. Scott

In his op-ed piece on professor Dean Kenyon's troubles at UCSF, Stephen C. Meyer exhibits serious misunderstandings of science, academic freedom, and the creation/evolution controversy. First, either life originated naturally or supernaturally. Science is limited to only natural explanations. Yes, theoreticians in this area rely on materialist explanations: they are doing science. Kenyon's teaching of "intelligent design" is indeed religion, not science. Further, if today we don't know all the steps involved in the origin of life, this doesn't mean we have to leap to a supernatural explanation, or to conclude that evolution didn't occur, which is Kenyon's message and why he is opposed by his chairman and other scientists.

Second, academic freedom also requires academic responsibility. The first responsibility is to students, who should get what they sign up for. In a biology class, students should be taught state of the art biology, not theology. Regardless of its luke-warm support

in the general public, evolution is the foundation principle of biology and teaching that it didn't occur is equivalent to teaching flat-earth geography. It is not a violation of Kenyon's academic freedom to ask him to teach standard biology. In fact, he teaches his non-standard biology in upper division classes and in graduate seminars.

It is only in a freshman course, where students are least prepared to understand why Kenyon's ideas are wrong, that he is restricted. Doesn't sound too onerous to me.

What Kenyon is teaching, by his own admission and the testimony of students in the class, is a view of evolutionary theory exemplified in his book, *Of Pandas and People*, which presents "intelligent design theory," a mutation, so to speak, of scientific creationism which reflects the same religiously-inspired caricature of evolutionary theory and bad biology as its ancestor. Kenyon claims in *Pandas* that "two completely hybrid (*sic*) individuals could produce offspring exhibit-

ing the complete range of possible skin colors," a statement breathtakingly ignorant of genetics, but "explaining" how the great range of human skin colors could arise from Noah and his family.

Students deserve better.

[Note: A slightly edited version was published by the *Wall Street Journal* 12/15/93 along with a letter from Thomas H. Jukes—and many supporters of Kenyon and the *WSJ* position.] ♦

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RESOURCES

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Berra, <i>Evolution and the Myth of Creationism</i>	8.95	7.00	McGowan, <i>Dinosaurs, Spüfies and Sea Dragons</i>	14.95	12.00
Bowler, <i>The Non-Darwinian Revolution</i>	12.95	10.35	McGowan, <i>In the Beginning... A Scientist Shows Why the Creationists Are Wrong</i>	18.95	15.25
Cartmill, <i>A View to a Death in the Morning</i>	*29.95	23.95	McIver, <i>Anti-Evolution, An Annotated Bibliography</i>	15.95	12.75
Clark, <i>Evolution and Cultural Literacy</i>	7.00	5.60	McKown, <i>The Mythmaker's Magic</i>	*23.95	19.15
Dalrymple, <i>The Age of the Earth</i>	*55.00	44.00	Moore, <i>Science as a Way of Knowing: The Foundations of Modern Biology</i>	29.95	23.95
Dawkins, <i>The Blind Watchmaker</i>	10.95	8.75	Newell, <i>Creation and Evolution: Myth or Reality?</i>	12.95	10.35
Deford, <i>A Reparation: Universal Gravitation a Universal Fake</i>	6.00	4.80	Numbers, <i>The Creationists</i>	*27.00	21.50
Diamond, <i>The Third Chimpanzee</i>	12.00	9.50	<u>NEW</u> Quammen, <i>The Flight of the Iguana</i>	*19.95	9.00
Dietz & Holden, <i>Creation/Evolution Satiricon</i>	12.95	10.25	Raup, <i>Extinction: Bad Genes or Bad Luck?</i>	*19.95	15.95
Desmond & Moore, <i>Darwin. The Life of a Tormented Evolutionist</i>	*34.00	27.25	Robinson & Tiger, eds. <i>Man and Beast Revisited</i>	16.95	13.55
Ecker, <i>Evolutionary Tales</i>	10.00	8.00	Ruse, <i>But is it Science?</i>	*29.99	23.95
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Eve and Harrold, <i>The Creationist Movement in Modern America</i>	11.95	9.55	Strahler, <i>Science and Earth History, the Evolution/Creation Controversy</i>	*48.95	39.15
Godfrey, <i>Scientists Confront Creationism</i>	10.95	9.50	Strahler, <i>Understanding Science</i>	*25.95	20.75
Gould, <i>Bully for Brontosaurus</i>	10.95	8.75	<u>NEW</u> Tournay, <i>God's Own Scientists</i>	15.00	12.00
Gould, <i>Ever Since Darwin: The Panda's Thumb</i> (2 bks each:)	9.95	7.99	Van Till, Young, & Menninga, <i>Science Held Hostage</i>	10.99	8.75
Gould, <i>Hen's Teeth and Horse's Toes</i>	6.95	5.55	Wilson, <i>The Diversity of Life</i>	*29.95	23.95
Gould, <i>Flamingo's Smile; Wonderful Life</i> (2 bks each:)	10.95	8.75			
<u>NEW</u> Gross & Levitt, <i>Higher Superstition</i>	25.95	20.75			
Harrold & Eve, <i>Cult Archaeology and Creationism</i>	*24.95	19.95			
<u>NEW</u> Holt, <i>Nonscience and Anti-science</i>	*24.95	19.95			
Howells, <i>Getting Here</i>	19.95	15.95			
Hughes, <i>Reviews of Creationist Books</i>	10.00	8.00			
<u>NEW</u> Kauffman, <i>The Origins of Order</i>					
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Lewin, <i>In the Age of Mankind</i>	19.95	15.95			
Lewin, <i>The Thread of Life</i>	19.95	15.95			
Maynard Smith, <i>Did Darwin Get it Right?</i>	*25.00	20.00			
Mayr, <i>One Long Argument: Charles Darwin and the Genesis of Evolutionary Thought</i>	10.95	8.75			
McCollister, ed., <i>Voices for Evolution</i>	10.00	8.00			

Kids' Books

Barker, <i>Maybe Yes, Maybe No</i>	12.95	10.25
Cole, <i>Evolution</i>	4.50	3.60
<u>NEW</u> Jackson, <i>The Tree of Life</i>	14.95	11.95
Peters, <i>From the Beginning, The Story of Human Evolution</i>	14.95	11.95
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RESOURCES

Listing items here or offering to distribute them does not imply NCSE endorsement; annotations are by the editor or various contributors. "SASE" = "Self-Addressed Stamped Envelope."

Anon. 1993. Believe It or Not—An Atheist Found Noah's Ark! CBS Cancels Religious Programs After Ark Hoax Exposed. *Freethought Today*, Nov., p.4. More details on the George Jammal hoax; a bit too self-congratulatory, since CBS presses ahead with more tabloidism.

Armstrong, Karen. 1993. *A History of God; The 4000-year Quest of Judaism, Christianity and Islam*. NY: Knopf. 160 pp, illus. \$27.50. Glowingly reviewed by theologian Harvey Cox; looks at similarities, common threads and tales, and

eventual splits among the 3 faiths, and changing emphases on different parts of sacred texts.

Bernstein, Alan E. 1993. *The Formation of Hell; Death and Retribution in the Ancient and Early Christian Worlds*. Ithaca: Cornell University Press. 392 pp, \$32.50. Like so much of "Old Time Religion," Hell barely appears in the Bible but has become a fairly recent obsession of some Christian sects. Is evolution ed the path to it, then?

Berta, Annalisa. 1994. What is a Whale? *Science* 263:180-181, 14 Jan. News article summarizing issues raised by Thewissen et al. re: whale evolution.

Brenner, S. 1994. The Ancient Molecule. Review of R. Gesteland and J. Atkins, eds., *The*

RNA World. Cold Springs Harbor Press, 1993. In, *Nature* 367: 228-229. Technical book on earliest life theories.

Burney, David A. 1993. Recent Animal Extinctions: Recipes for Disaster. *American Scientist* 81(6):530-541. Climate and vegetation change, human hunting, and intro of exotic species have been major forces in prehistoric evolution.

Cavalli-Sforza, Luigi L., Paolo Menozzi, and Alberto Piazza. 1993. Demic Expansions and Human Evolution. *Science* 259:639-646. Modern human geographic range expanded rapidly in last 100,000 years; genetic as well as cultural remains trace the explosion. Technical.

NEW BOOKS

God's Own Scientists: Creationists in a Secular World

Christopher Tloumey

Anthropologist analyzes the scientific creationist movement.

The Origins of Order: Self-Organization and Selection in Evolution

Stuart A. Kauffman

An answer to "design" in the origin of life: Simple and complex systems can exhibit powerful self-organization.

The Tree of Life

Ellen Jackson

A book to read to young children that conveys not only the nature of evolution, but the wonder and excitement as well.

Higher Superstition: The Academic Left and its Quarrels with Science

Paul R. Gross and Norman Levitt

Analysis (and refutation) of a series of modern anti-science attitudes, including post-modernism, feminist anti-science, multiculturalism, and creationism. "...a tough-minded stinging assault on all manner of scientific foolishness...neither an anti-intellectual nor an anti-academic book, and it draws careful distinctions between what is controversial yet worthwhile and what is pure nonsense....a well-constructed and valuable polemic" — *Nature*.

Noncience and Anti-science

Gerald Holt

Distinguished Harvard historian/physicist analyzes the nature and history of science and anti-science movements old and new. He discusses the world view and political ambitions of purveyors of "alternative science:" creationists, new-agers, and others.

The Flight of the Iguana

David Quammen

Collection of essays from award winning science writer, contemplating the variety of nature and human responses to it. Thoughtful and yet amusing presentations of Darwin's flying iguana, the vegetarian piranha, and other oddities.

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pp. 22-23

RESOURCES

Cohen, John. 1994. Evolutionary Biology: Will Molecular Data Set the Stage for a Synthesis? *Science* 263:758. Report on a January conference, and more evidence against the 200,000-years-ago "Eve" bottleneck.

Crews, David. 1994. Animal Sexuality. *Scientific American* 270(1):108-115. A new framework for understanding the origin and evolution of sexuality. VIP for teachers' reference.

Deamer, David W., and Gail R. Fleischaker, eds. 1994. *Origins of Life: The Central Concepts*. NY: Jones and Bartlett Publishers. Pb reprint of 46 papers from 1908 to the present, with life dated to ca. 3.7 billion years ago but not yet definitively explained.

Dronamrju, Krishna H. 1993. *If I Am To Be Remembered: The Life and Times of Julian Huxley*. River Edge, NJ: World Scientific. xxiv+294 pp, + plates. \$38. "An old fashioned biography."

Holton, Gerald. 1993. *Science and Antiscience*. Cambridge: Harvard University Press. 188 pp, \$24.95. Controversial bk about antiscience as a "threat" to democracy; critics attack it as too smug or elitist about science virtues. Available at discount from NCSE—See p. 22.

Horodyski, R.J., and L.P. Knauth. 1994. Life on Land in the PreCambrian. *Science* 263: 494-498. Technical look at microfossils on land, 800-1,200 million years ago.

Kerr, Richard A. 1993. The Greatest Extinction Gets Greater. *Science* 262:1370-1371 (26 Nov). News article summary of D.H. Erwin's *The Great Paleocene Crisis: Life and Death in the Permian* (Columbia Univ. Press,

1993). 250 mya predators caused a bigger, more basic extinction wave than the paltry end of the age of dinosaurs.

Lemonick, Michael D. 1994. Human origins (cover story). *Time*, March 14, pp. 80-87. Is *Homo sapiens* older than thought in Asia? More than one origin out of common ancestry? Good "Time"-style treatment.

MacPhee, Donald G. 1993. Directed Evolution Reconsidered. *American Scientist* 81(6):554-561. What seemed a serious challenge to classical Darwinism may be as easily explained by facets of bacterial metabolic regulation.

Miller, Kenneth R. 1994. Life's Grand Design, *Technology Review* pp 24-33, Feb/March. NCSE Supporter Miller argues that seemingly perfect examples of "intelligent design" such as the human eye and the genetic code actually display many errors and more properly reflect the opportunistic forces of natural selection. \$1.00 + SASE from NCSE.

1993 Science education publications from AAAS, published by Oxford University Press:

Benchmarks for Scientific Literacy. 448pp, pb. \$21.95

Science for All Americans. 272pp, pb. \$11.95

From bookstores or Oxford University Press, Dept EC, Madison Ave., NY, NY 10016

Nitecki, Matthew H., and Doris V. Nitecki, eds. 1993. *Evolutionary Ethics*. Albany: State University of New York Press. x+368 pp, hardcover. NP. From Huxley and Dewey to sociobiologists and their critics. Outstanding range and some excellent new studies. Incl. papers by NCSE's Ruse and Godfrey.

Noll, Mark A. 1993. The Scandal of the Evangelical Mind. *Christianity Today* 25 October, pp. 29-32. Theme is: evangelicals have al-

Kansas Biology Teacher an Excellent Resource

We have just received vol. 4, No. 1 of *KBT*—this one featuring articles on issues of animal rights and biology teachers. Other topics are covered, as usual, including School Law and the Biology Teacher, evolution education, and useful book and periodical reviews.

This issue includes several pages of bibliography on the issues of animal rights, experimentation, etc.

Published by the Kansas Academy of Science, this is a refereed journal. [Truth in newsing says I should note that *KBT* reviews *Creation/Evolution* issues, often favorably, but hey! I can't blacklist publications with good taste!] *KBT* is a quarterly, \$16/yr (\$10 for students) from Box 4050, Emporia State University, 1200 Commercial St., Emporia, KS 66801-5087. ♦

RESOURCES

ways founded colleges and campaigned as intellectuals until recent antievolutionism, etc.

Olson, Richard. 1993. *The Emergence of the Social Sciences, 1692-1792*. NY: Twayne. 230pp, NP. Good reviews; origins of ideas of progress and political evolution.

O'Neill, Luke, Michael Murphy, and Richard B. Gallagher. 1994. What Are We? Where Did We Come From? Where Are We Going? *Science* 263:181-183. News report on a Sept. Dublin meeting, "What is Life?"

Phelps, Daniel J. 1994. Review of D. Gish, *Dinosaurs by Design*. In *Skeptical Inquirer* 18(2):187-191, Winter. A very detailed review of Gish's 1992 book about the dinos and humans who lived alongside them. **Available from NCSE for \$.50 and SASE.**

Plantinga, A. 1991. When Faith and Reason Clash: Evolution and the Bible. *Christian Scholar's Review* 21(1):8-32. Conservative Christian view, highly rec'd by M. Ruse.

Rachels, James. 1990. *Created from Animals: The Moral Implications of Darwinism*. NY: Oxford Univ Press. 224 pp, \$22.95. Reviewed by E.C. Scott, *Journal of Human Evolution* 24(6): 508-510, 1993. **Review avail from NCSE for \$.50+SASE.**

Renfrew, Colin. 1994. World Linguistic Diversity. *Scientific American* 270(1):116-123. More on the evolution of language, world population growth and movement, and genetic evidence—this time from a leading archaeologist.

Richards, Robert J. 1993. *The Meaning of Evolution*. Chicago: Univ of Chicago Press. Argues

that Darwin was motivated by the doctrine of progress, contrary to most scholars of Darwin.

Ruse, Michael. 1993. Booknotes. *Biology and Philosophy* 8:353-358. Ruse reviews Numbers, NCSE's book of reviews, etc. and discusses his dismay at Phillip Johnson for misinterpreting his AAAS comments. **Available from NCSE for \$1.00 + SASE**

Schaeffer, Frank. 1992. *Portofino*. NY: Macmillan. 248 pp, \$15. Novel by son of leading Calvinist creationist, Frances Schaeffer, about growing up in a family like the author's. Good reviews.

Scharmann, Lawrence C. 1993. Teaching Evolution: Designing Successful Instruction. *The American Biology Teacher* 55(8):481-486. How-to ideas.

Schrock, Richard. 1994. *Biology Education Notes* No. 26. Biology and science ed in China. 16 pp; privately published "review of biological education and recent literature for colleagues." NP.

Shermer, Michael. 1993. How Do You Explain That? 25 Creationist Arguments and 25 Evolutionists'

Answers. *Skeptic* 2(2): 23-29. A sort of primer for debaters.

Stafford, Tim. 1993. Move Over, ACLU. *Christianity Today* 37(12):20-24 (25 Oct). Review of the Rutherford Institute, American Center for Law and Justice, and National Legal Foundation, evangelical Christian challengers to the ACLU re: creationism, etc.

Sun International. 1993. Sun Pictures Responds to Ark Hoax. *Skeptic* 2(2):14-17. Sun producers stick by their claims re: CBS Arkeology.

Tear, Timothy H., J.M. Scott, P.H. Hayward, B. Griffith. 1993. Status and Prospects for Success of the Endangered Species Act: A Look at Recovery Plans. *Science* 262:976-977 (12 Nov).

Thewissen, J.G.M., S.T. Hussain, and M. Arif. 1994. Fossil Evidence for the Origin of Aquatic Locomotion in Archaeocete Whales. *Science* 263:210-212, 14 Jan. Major article on a favorite creationist theme—New discovery of "whale" fossils with functioning hind legs probably able to walk on land or swim.

Toumey, Christopher. 1993. Evolution and Secular Humanism. *Journal of the American Academy of Religion* 61(2):275-301. How do antievolutionists now use "secular humanism" as the late-20th C carrier of evil, and how does their traditional opposition to evolution fit in? **Available from NCSE for \$1.50 and SASE.**

Turner, Michael S. 1993. Why Is the Temperature of the Universe 2.726 Kelvin? *Science* 262:861-866 (12 Nov). Clues to dark matter and the origin of the universe from the COBE probe.

Wonder Science is the publication of the American Chemical Society education division for kids from 6-12, and is a monthly publication mailed to home or school. Each issue is full of hands-on activities having to do with physical science. It is really good stuff. Write ACS, 1155 16th St. NW, Wash DC 20036. Call 1-800-333-9511.

RESOURCES

Waters, C. Kenneth, and A. Van Helden, eds. 1993. *Julian Huxley: Biologist and Statesman of Science*. Houston: Rice University Press. xii+344pp. \$32.50. Papers from a 1987 conference.

Wills, Christopher. 1993. *The Runaway Brain; the Evolution of Human Uniqueness*. NY: Basic Books. 320 pp, \$25, illus. General evolution with emphasis on cognitive evolution; treats human evol as directional, which will dismay many.

Wood, Colin. 1986. Evolution of Man. *Mensa* July pp. 9-10. One of many pubs by Wood, an enthusiastic British Fortean antievolutionist from whom we hear regularly.

Wood, Colin. 1993. Illustrated Guide to Transitional Fossils. 2pp flier claiming there are no transitional fossils; NO illustrations—perhaps to make a point?! Available from the author at Mansion Cottage, Kenwood, Hampstead Lane, London NW3 7JR, UK. English antievolutionism.

Young Environmentalist's Action. Monthly newsletter for elementary school science classes. Global Response, P.O. Box 7490, Boulder, CO 80306-7490. English or Spanish. \$9 donation, waived for low income. ❖

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Texas Textbook Wars Continue

This year the Texas textbook battle is over health education rather than evolution. In a pattern familiar to evolution advocates, guidelines had been established, books submitted, and hearings held—and the hearings then changed the rules of the game. Holt decided to forego the \$7.5 million sale—about 8% of US sales (second only to California with 12%). Texas and California are among 22 states with state-wide adoption policies. Other publishers said they would try to make the requested revisions.

The Texas Board of Education examined five books for state-wide adoption and requested a total of 400 revisions. Typically, publishers in the past negotiated and ultimately agreed to make many changes in order not to lose the lucrative Texas market. This year, however, Holt, Rinehart

and Winston, Inc. decided to withdraw its widely praised textbook rather than accede to demands from religious right organizations opposed to its treatment of sexual issues.

"Some of the mandated revisions are in opposition to the fundamental philosophy of our program and are potentially injurious to the students of Texas," wrote Holt president William A. Talkington, according to the *New York Times* (17 March 1994). Critics had objected to inclusion of information on birth control, abortion, sexually transmitted diseases, homosexuality, and self-examination for tumors, among other things. They also required inclusion of the text of Texas laws against sodomy. This would make *Holt Health* a Texas-only book, the publisher decided. ❖

Correction, or Arkeoastronomy

Editorial condensing of "Dan Quayle on Noah's Ark?" (13(3):6) garbled one point and also mislabeled Carl Baugh's Glen Rose, TX museum: It is called the "Creation Evidences Museum," not the Glen Rose Ark Museum. More importantly, I confused the work of two very different humorists. Cartoonist Gary Larson's "Bozone Layer" was designed to protect the rest of the Universe from Earth's harmful effects, not Carl Baugh's

pre-Flood ice canopy! Baugh said the ice canopy amplified the digitized symphonic music he claims is being beamed from the stars, and it provided a metallic hydrogen shell (from the hydrogen in the ice) which contained a hyperbaric atmosphere that caused plants, animals and humans to grow into giants.

I hope this scientific point is now clear. Thanks to Brad Corum for pointing this out! ❖

KEEPING TABS

NCSE at Illinois Science Meeting

David Bloomberg
Chair, Rational Examination
Association of Lincoln Land
Springfield, IL

❖
The majority of teachers we met seemed quite good—and concerned about the unscientific ones in their profession.

On October 1st and 2nd, NCSE, REALL, the St. Louis Association for Teaching and Education (SLATE)—the Committee of Correspondence for Missouri and Southern Illinois, and Gateway Skeptics cosponsored a booth at the annual meeting of the Illinois Science Teachers Association (ISTA). The booth was staffed by Gateway Skeptics Chairman Steve Best, SLATE Director Ranse Traxler, and myself, the Chairman of REALL.

NCSE sent a great deal of literature to hand out or sell. Our hope in getting the booth was to inform science teachers of the problems with creationism and other anti-scientific beliefs in schools and to interest them in our organizations. Ranse Traxler also gave a presentation on anti-evolution activities in public schools.

All of the NCSE brochures were gobbled up by interested science teachers, along with some of the local groups' information sheets. In fact, several people signed up to get NCSE materials sent to them when we ran out and interest continued.

The ISTA formerly featured talks by creationists, but they have put together a resolution supporting evolution education and no longer allow such "equal time" talks. (In fact, Traxler's talk was almost rejected because he dealt with the subject). The creationist

who had previously given a presentation to the ISTA was at the Traxler talk, as was an officer of the ISTA and a consultant to the Illinois State Board of Education who commended Traxler for his work and courage in speaking out against the unscientific behavior of some schools.

The majority of teachers we met seemed quite good—and concerned about the unscientific ones in their profession. Many of the attendants from larger cities simply couldn't believe this was still an issue. But those from rural areas knew it was, because they generally knew someone who was teaching creationism. Unfortunately the rural areas are unlikely to be exposed to scrutiny of scientists, unlike Peoria, for example, where Traxler and others were able to document creationist inroads. And unlike Vista, CA, they simply teach creationism without talking about it.

Happily, most of the people who came by and talked to us agreed that evolution needs to be taught and that creationism should not be. Some were going through controversies in their districts, and one woman told me she had actually quit her previous job because they required her to teach creationism.

Of course there were others there who thought we were all wet.

The most notable opponent we encountered was actually a representative from a scientific equipment company (microscopes, etc.) in the booth across from ours. It turns out that he is a Biblical literalist and friend of the

Missouri creationists group. When he realized we were promoting evolution and attacking creationism, he came over and gave us a rather loud piece of his mind. He attacked us for trying to influence science teachers (by giving them scientific information?), and he confused the theory of evolution by suggesting it dealt with the rise of life from non-life, calling evolution "scientific gobbledygook" (this from a man selling scientific supplies for a living). He informed Steve Best and I that we are going to hell.

After a while he stormed back to his booth and seethed. A couple of hours later he came back and offered, "No hard feelings," and we shook hands. But then he proceeded to pound me more quietly with religious and philosophical topics which had nothing to do with evolution or science ("Do you accept Jesus Christ as your Lord and Savior? What are you going to do when you face God and he sends you to Hell for promoting evolution?," etc). Needless to say this was not the most fruitful discussion.

There were other creationist visitors to our booth. I think I impressed at least one of them by listening to what she had to say and trying to give her information rather than attacking her viewpoint. Apparently her father is a scientist who despises her outlook and merely ignores her whenever she tries to discuss creationism. She assumed that being for evolution meant being opposed to dialogue, and I showed that was not true. ❖

KEEPING TABS

Popper and Evolution

Stephen G. Brush
Institute for Physical Science
and Technology
University of Maryland
at College Park

In connection with the discussion of Karl Popper's philosophy of science (*Reports* 13(1) and 13(3)), it should be recalled that this philosophy played a small but significant role in the creation-evolution controversy in the early 1980s, and it is still used by anti-evolutionists a decade later.

Popper asserted that making testable (and thus potentially falsifiable) *predictions* of previously unobserved phenomena was a necessary condition for a theory to be called "scientific." This was known as the "falsifiability" criterion. Popper himself concluded that Darwinian evolutionary theory failed to satisfy that criterion so it was not a scientific theory but only a metaphysical research programme—a way of explaining what had already happened, not a theory that can predict what will happen in the future.

There is an obvious flaw in the criterion, at least in the extreme version originally proposed by Popper: it excludes not just evolutionary biology but also historical geology and much of astronomy, even though these are recognized sciences. A more subtle objection is that even in testing theories that obviously are scientific, such as Einstein's general theory of relativity, scientists do not give any more weight to predictions of previously unknown phenomena (such as the bending of light by the Sun) than to deductions of known phenomena (such as the advance of the perihelion of Mercury).

Popper reversed himself in 1978 and asserted that Darwinian theory is scientific. But the damage had been done; creationists used Popper's original statement to argue that evolution is not a science and hence does not deserve precedence over creationism in the classroom. For example, in 1982 a proposed "equal-time" law in Maryland argued that "evolution-science like creation-science cannot be . . . logically falsified."

In a society where the word "science" implies reliable knowledge and the authority that goes with such knowledge, lots of people (especially including creationists) want to grab that label, and many of us feel a strong need for an objective test or formula to distinguish between science and nonscience. Popper's falsification criterion once seemed to be the answer, but it was too simplistic. I don't think there is a single test that can capture the multidimensional nature of real science. At the same time we can insist on several factors that should be involved in judging theories: internal coherence, compatibility with other accepted theories, agreement with empirical evidence, etc. A careful reading of Popper's works shows that he advocated such a multifactor approach when he wasn't discussing the falsifiability criterion which made him famous. (References for the statements mentioned here can be found in my article in *Science*, 1 December 1989.)

Ed: CIE Issue VI, 1981, quotes Popper's "reversal" directly in "Misquoted Scientists Speak Out," by J. Cole. ♦

♦
Popper reversed himself in 1978 and asserted that Darwinian theory is scientific.
♦

Alaska SBE Contemplates "Equal Time"

Eugenie C. Scott

During November of 1993, the Alaska State Board of Education held hearings on whether to include creationism along with evolution in the state science curriculum under revision. We are happy to report that sanity prevailed and the SBE voted to include only evolution in the guidelines. The Science Subject

Matter Standard, in fact, requires that students "Distinguish between the documented evidence of changing life forms over time and the proposed explanation for those changes (Evolution and Natural Selection.)"

It is amazing that in 1993, six years after the *Edwards v. Aguillard* Supreme Court decision, that a major government body could even con-

template such a thing. In *Edwards* the court declared that creationism (even the "scientific" variety in the law in question) was religion, and that to require it to be taught resulted in state support of religion. "Equal Time" laws have gone by the wayside, for the most part, replaced by more subtle arguments for the same thing via "Alternate theories" or opposition to "philosophic naturalism." ♦

KEEPING TABS

Richland, WA Report

Earl Fleck
Department of Biology
Whitman College,
Walla Walla, WA

Well, last evening was interesting. The school board for an adjacent city, Richland, Washington, is considering incorporation of scientific creationism as part of their science curriculum. Last night there was a presentation by the local creationist group to the science curriculum committee and to the general public.

A local physician lead off. He stated that evolution is not testable since it is not repeatable—the standard creationist treatment of evolution: since evolution isn't repeatable and "intelligent design" isn't repeatable, both should be taught as equally likely explanations. I'm really surprised that he used the terms "scientific creationism" and "intelligent design" since both have religious connotations and have recently been heartily critiqued. Never once did he mention *falsification*—the concept that ideas should be subjected to disproof. Further, he did not distinguish between evolution as a fact and the mechanisms of evolution.

Second up was a physical chemist in a polymer group at a local government lab. Very impressive credentials. He gave a sample mini-lesson to 15-16 year old high school students (10th graders in US). This lesson was supposed to be a neutral treatment of the origin of life from the abiotic world. The chemistry was brilliant, as one might expect; however, it was stacked. He explained the present informa-

tion transfer system in cells (replication, transcription and translation) and then showed these processes in an eucaryotic cell. To cap this section of his mini-lesson, he estimated the probability of spontaneous assembly—of course, he came out with an extremely low probability, about $1/10^{120}$. I was astounded that this scientist, with such an impressive research background, could gloss over the problems with this type of analysis. He didn't even consider that the earliest information transfer systems would likely not be as complicated as present day ones (Remember ideas about an RNA world??). I was further astounded to see him include the eucaryotic cell as the final product of his instantaneous evolution model. Even, a physical chemist in polymer chemistry should have some comprehension that procaryotic cells preceded eucaryotic cells. However, it is clear that he recognized where the weak spots are in prebiotic origin of life theory. His take home lesson was that since there are so many holes in the scientific ideas about the prebiotic origin of life that intelligent design must be considered. He even used an analogy of an abandoned jeep deep in the jungle found by natives as the illustration of intelligent design (the intelligent watchmaker).

Third, and last, up was a local architect who demanded that the science curriculum include the following:

1. Avoid presentations on origins that state or imply the scientific issues are solved. (Reasonable-enough—teach

ers should stress that scientific knowledge is tentative.)

2. Present the intelligent-design concept in parallel to evolution. Main concept: the complexity of life appears to require some intelligent design.
3. Incorporate [several] non-religious supplemental materials. A few examples are: a. *Of Pandas and People* by Davis and Kenyon. b. *The Natural Limits of Biological Change* by Lester and Bohlin. c. *What is Creation Science?* by Morris (Henry Morris) and Gary Parker. 4. The architect also would be happy to supply in-service instruction for those teachers who are not comfortable with the teaching of creation-science.

These presentations took about 1½ hours, and there was about 45 minutes of response time. Some good responses came, although there was very little time to refute the misinformation presented.

All three original presenters, in the question period, felt convinced that the trend during the past century of taking the supernatural out of science (naturalistic philosophy) must be redressed.

Luckily, there were representatives of mainline scientists in the audience, the ACLU, and some very intelligent non-scientists. However, the bulk of the audience was hooting in support of the presenters. I was there on request of the National Center for Science Education, by the way. ♦

KEEPING TABS

Duane Gish and InterVarsity at Rutgers

Richard Troff
Rutgers University

On Monday, March 21, 1994 over 100 people came to hear ICR vice president Duane Gish on the Busch Campus of Rutgers University in New Jersey. The lecture was sponsored by Rutgers InterVarsity Chinese Christian Fellowship. Dr. Gish was touted in fliers for the event as "one of the world's leading experts on Scientific Creationism. Unfortunately, scientists have a lot to fear from the overly credulous victims of pseudoscientific sophistry.

None of Dr. Gish's supporters that evening seemed to notice the numerous times Gish contradicted himself by changing his position on a subject when it suited the needs of his argument. Occasionally, Gish's claims were laughable. He said, for example, that evolutionists "predicted" life on Mars. In other words, since there is no life on Mars, that's another strike against evolution on Earth. This is such an incredible grasp for straws that it deserves no comment. Gish claimed that anti-creationist books "don't say a word" about the origin of fishes. I found this assertion peculiar, so I looked in the best anti-creationist book available. Allow me to highly recommend Arthur N. Strahler's *Science and Earth History* to anyone interested in all the information that Gish likes to pretend doesn't exist. [Available at discount from NCSE—See Centerfold.] Glancing through the table of contents, I found "Chapter 42—Invertebrates to Vertebrates." Flipping to the appropriate page, there was a section on the evidence for evolution from invertebrates to

jawless fishes. Before that, there was also a section on precursors to Cambrian metazoans, which Gish also told us had never been found.

Lest anyone think this was a simple case of a crackpot outsider coming to Rutgers for a one-shot lecture of ludicrous assertions, allow me to point out that Rutgers InterVarsity seems to have actively participated in this campaign of misinformation for Jesus' sake. Before the lecture, a pamphlet was distributed to the audience. The pamphlet appears to be untitled and there is no apparent author listed. However, "Rutgers InterVarsity Chinese Christian Fellowship" does appear on the pamphlet, and I will assume that they are at least indirectly responsible for the distribution of it.

The pamphlet is a classic pastiche of selective quotations and creationist nonsense. For example, it states, "The Second Law of Thermodynamics states that there is a general tendency of all observed systems to go from order to disorder." This is, of course, complete nonsense. The Second Law of Thermodynamics only applies to systems that are isolated and in thermal equilibrium. The pamphlet's drivel continues with, "A fundamental law of physics says that natural systems go from order to disorder; evolutionists say that these same systems will go from disorder to order." Again, I wish to point out that the Second Law of Thermodynamics only applies to isolated systems in thermal equilibrium, and evolution only applies to living systems. Living systems are not isolated systems in thermal equilibrium. Therefore, the systems that an evolutionary scientist talks about are not the same systems

that the Second Law of Thermodynamics talks about. The author sums up with the outrageous claim that the "evolutionary hypothesis ... contradicts one of the most well-established laws of science (the Second Law of Thermodynamics)." The fact that the creationist author of this idiocy knows nothing about thermodynamics doesn't keep him from trying to use it as evidence for the cause of creationism; unfortunately, this seems to be true of the typical "scientific" creationist's knowledge and attitude towards all fields of science❖

Usborne Wimps Out?

Eugenie C. Scott

The Usborne publishing company, publishers of some excellent evolution references for children, seems to be following the lead of too many American publishers who feel the need to soft-pedal evolution. In a "product knowledge" information sheet from Usborne's American distributor, EDC, a "revamping" of the Picture World History Dinosaurs book states that the revised text presents "More neutral evolutionary slant (pg. 13): 'The way animals and plants slowly change ... The idea that plants and animals slowly change ...'" Also, the publisher has added the following sentence "Some people disagree with Darwin's ideas about Evolution." We doubt they are discussing the controversy over gradualism vs. punctuation. It is regrettable that a good publisher feels it is necessary to pander to antievolutionists in order to sell books in the US. ❖

❖
Publisher goes
"neutral" on
evolution.
❖

KEEPING TABS

Ken Ham Leaves ICR—Mostly

John Cole

Australian creationist Ken Ham has resigned from the Institute for Creation Research to head his own ministry, ICR reports in January 1994. He will remain affiliated in some loose way as he strikes out on his own, joined by former ICR staffer Gary Parker and others with whom he was associated in his earlier Australian ministry. Apparently he will continue to work with ICR as time permits, perhaps cooperating on speaking arrangements, for example.

Ham joined ICR and rather quickly redefined that organization into a much more blatantly religious and "Religious Right" lobby. When Ham spoke or wrote, he was often as much interested in abortion and school prayer and homosexuality and other clearly religious and cultural arguments as he was in the supposed focus of ICR on an alternative "science" to substitute for evolution education (or the demand for equal time for the "other" theory). His aggressive leadership and outspokenness on such issues seemed to be redirecting ICR's publicly-acknowledged priority into an unabashedly religious category. Ham's zealous evangelism contrasted rather markedly with some "scientific" creationists' claim to be dissenting scholars rather than a religious lobby.

Even without Ham, ICR was always closely allied with what has become known as the "Religious Right," of course; ICR and Heritage College grew out of the work of co-founder Tim LaHaye, one of the most influential and least-

known American ultra-conservatives (co-founder of the Moral Majority and other national organizations as well as the ICR, for example).

Minus Ham and his tabloid-style, unabashed religiosity, it will be interesting to see what public path ICR adopts next. A Hamless ICR will be dedicated to the same basic goals, but it is unclear whether there

will be any serious changes. "Genesis Institutes" and other gatherings continue to combine Christian revival meeting hoopla with a claimed sudden gear shift into "objective science" and back again on a given weekend. Will it now be more subtle? Only time will tell, but the latest *Acts and Facts* seems to have Henry Morris taking up the fire and brimstone torch left behind by Ham. ♦

"Charter Schools" in Mass.

In the wake of voucher plan defeats by voters in California, Colorado and elsewhere, Massachusetts has joined the ranks of seven states now licensing "Charter Schools." Fifteen have been approved for next year; three of these are contracts with the Edison Project, and 12 are local initiatives.

Hoping to increase public school quality by setting up competing systems, the idea is to allow a wide range of schooling philosophies to take flight. Administrators will be awarded the per-pupil average expenditure per year (\$4,858 in Massachusetts, compared with the national average of \$6,043). Several of the schools will be operated by colleges, and others are being founded by groups of teachers and parents. A retired admiral will head a Cape Cod school concentrating on the marine environment, for example, and an art-centered curriculum will be tried in Williamsburg with 35 K-4 students. Others will be "back-to-basics" in style, and at least one will be focused on family-wide social services in a low income housing project. Edison schools will add a month to the

regular school year and an extra hour each day. State-wide, the experiment will enroll less than 1% of the student population, but officials hope to expand it drastically.

The Edison Project of Whittle Communications has had difficulty getting up and running after early fanfare. It had planned to start private schools using vouchers, but it is now turning to the idea of running otherwise public schools for profit.

Everyone concerned with education will be watching experiments in Massachusetts, California, Oregon, Colorado and elsewhere. On the one hand, there is wide frustration with existing schools. On the other hand there is also concern about the effect of privatizing public services by supporting selective schools, leaving public schools the problem students and older facilities. Charter schools will be required to meet basic state guidelines and for now, at least, they do not include religious schools. Governor Weld had earlier indicated he would like to contract with Edison to run all schools in the state. ♦

❖
Fire and
brimstone
evangelist
moves on.

❖

KEEPING TABS

More On Johnson

Arthur M. Shapiro

University of California-Davis,
California

The new edition of Phillip Johnson's *Darwin on Trial* discusses Michael Ruse's controversial comments at the February 1993 AAAS symposium on "Nonliteralist anti-evolutionism," and proceeds to comment on my analysis of those remarks in these pages (NCSE Reports, Spring 1993, pp. 20-21). On p. 164 he pays me a back-handed compliment by saying "Shapiro's level of misunderstanding is far advanced over that of his many colleagues, who still parrot the 'self-justifying positivist propaganda about ultimate objectivity.'" Aside from the fact that this odd wording can be read as meaning I am *more* confused than my colleagues—I think he means *less*—it appears at the end of a paragraph that thoroughly misrepresents my position. Johnson does this in a lawyerly way, not attributing directly to me the position he caricatures, but associating it so intimately with my name that any but the most Jesuitical reader would assume it was mine.

For the record, then: Johnson says "Scientific naturalists [among whom, by clear implication, he counts me] insist, paradoxically, that the cosmos can be understood by a rational mind only if it was not created by a rational mind." Not only do I not insist upon this position, I don't know anyone at all who does. What is he talking about? Elsewhere in the same paragraph he says: "To theists . . . the concept of a supernatural Mind in whose

image we are created is the essential metaphysical basis for our confidence that the cosmos is rational and to some extent understandable." I know people believe this, because it was the cornerstone of a debate position taken by conservative theologian Dr. Greg Bahnsen here on my own campus a few weeks ago.

How could a rational and predictable universe be *inconsistent* with intelligent design? The only constraint upon the putative Designer is that He, She or It be willing to set and then abide by the rules. Like the kings of ancient Babylon (read the Book of Daniel), our Designer, having decreed thus-and-so, must suspend His own omnipotence and let the consequences unroll. Intelligent design in a Deist sense ("God isn't dead; he just doesn't want to get involved") should be perfectly compatible with science, even if redundant or unnecessary by the parsimony criterion as committed materialists see it. Intelligent design by an activist, interventionist Designer who makes the sun stand still and turns people into pillars of salt is another story. To do science in the presence of such a Designer is to bet always against His/Her/Its whims.

The appeal to cosmic order as a demonstration of Divine Mind—the Bahnsen position, which seems to appeal to Johnson—is not the same as the classical "Design demands a Designer" or "watch-maker" argument, but it's related to it. The trouble with it (from where I sit) is that one would predict on evolutionary grounds—invoking no supernatural agency—that organisms, ourselves included, would perceive the Universe as or-

derly and predictable *if it is*—because only then could they function in it. That is, the fact that we (scientists, but also dogwood trees, mayflies and pussycats) perceive the Universe as orderly and generalize from experience tells us that the Universe probably is orderly, but tells us nothing at all about *why* it is. Once again, evolution duplicates the outcomes predicted from intelligent design, rendering the Designer logically unnecessary, but also not necessarily false.

The position I just articulated is called "evolutionary epistemology" (in one of the two senses the term is used), and the interested reader, including Phillip Johnson, is invited to read *Evolutionary Epistemology and its Implications for Humankind*, by Franz M. Wuketits (SUNY Press, 1990; ISBN 0-7914-0286-X) for a good overview of the subject. Evolutionary epistemology has traditionally been scorned by mainstream analytic philosophers precisely because it appears to reduce many of the traditional questions of philosophy to epiphenomena grounded in the evolutionary molding of nervous systems. It should make Johnson a tad more nervous.

Manny Sillman Still a Biologist

We recently noted an NCSE award to Manny Sillman, identifying him as a physicist. He is now and has long been a biologist—and long-time Pennsylvania NCSE CC Liaison.

❖
Johnson
unclear on
evolutionary
epistemology

❖

KEEPING TABS

Creationist Fundraising Phenom

John Cole

According to the November *Nonprofit Times*, in its annual list of top 100 fundraisers, #42 on the list is "Focus on the Family," the creationist evangelical organization led by Dr. James C. Dobson. Last year they were not even ranked. Their contributions totalled \$68,894,869 this year.

Dobson, a televangelist, has been a frequent speaker at "scientific" creationist meetings and frequent "scientific" creationism advocate in his television and personal appearances. He has led numerous "crusades" against evolution education, and this is a major part of his newsletters and mass mail campaigns.

Also new to the rankings was "Campus Crusade for Christ," #21 with \$147,904,000 in income. Campus Crusade has wandered in and out of the creationist

camp, seldom making "scientific" creationism a big part of its crusade.

The 65th largest fundraiser, "The Navigators" of Colorado Springs, CO raised \$46,630,000. It has been a very low profile, high-intensity evangelical college campus ministry often associated with rigid fundamentalist views, but, like Campus Crusade, it has kept a low profile on the creationism cause. Last year they ranked 79th.

NCSE did not, alas, make the top 100 list, because of a picky accounting detail—we only received a few thousand dollars, welcome and useful as they were, not the millions received by some of the opposition! Individual contributions and some small grants from foundations for specific projects, plus subscription/memberships, keep NCSE going.

Paul K.
Feyerabend Dies

Philosopher Paul K. Feyerabend has died in Geneva at age 70. An emeritus professor at UC Berkeley, Feyerabend was initially a protege of Karl Popper. He soon developed a gadfly reputation, however, criticizing science and scientists for claiming to have any particular rationality or factuality for their claims. Science, he said, was a combination of propaganda, rhetoric, subterfuge, politics and conjecture. His radical views were adopted and cherished widely among anti-scientific movements and pseudoscientists who liked his argument that their techniques were no less scientific than mainstream scientists'. He also claimed that a good lawyer could devastate any scientific argument. These views did not endear him to the scientific community which did tend to acknowledge his point that science does not have all answers, as once almost literally claimed.

❖
Bartz
criticizes
the B-SA
for
uncritically
promoting
Phillip
Johnson's
book,
*Darwin on
Trial*.
❖

Bartz Fired at Bible-Science Association

We noted the change in direction at the *Bible-Science Newsletter* previously. Paul Bartz, former Executive Director and then Editor, had only a short devotional column left, we wrote. According to Bartz, he has no connection whatever with the B-SA; they are using a backlog of tapes and devotional columns. In a March 17th speech (*Christian News* 4/4/94), Bartz says he was fired in August 1993 by Executive Director Greg Hull.

Bartz accuses his old organization of promoting "Calvinism," now (the B-SA has always been closely aligned with a branch of the conservative Lutheran Church Missouri Synod). Furthermore, he accuses the association leadership with promoting "decision theology" (roughly, the idea that a person can make a "decision" to be saved rather than having it preordained by God). He accuses them of now defending young Earth claims with Dutch Reformed philosophy rather than Holy Scriptures. Bartz says the change apparently reflects Hull's belief that the Lutheran Church

constitutes only a small part of B-SA support, although Bartz disagrees.

Of particular interest to *Reports* readers, Bartz criticizes the B-SA for uncritically promoting Phillip Johnson's book, *Darwin on Trial* which, he says, denies the linkage of sin with death and Adam. This "fatal flaw" led Bartz to refuse even to sell the book, let alone advertise or promote it as editor. "New management" is reaching out to a broader anti-evolution market, and the former editor bitterly regrets the move.

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Network Project News

Molleen Matsumura

❖
US
recognition
of TRACS
accrediting
organization
begun by
ICR and
Henry
Morris.
❖

Since the last issue of *Reports* announced that I had joined NCSE's staff as Director of the Network Project, the Project itself has grown in several directions at once. The Project, originally funded by a grant from the Iowa Committee of Correspondence, began with mailings to a number of organizations that could be concerned about creationism, inviting them to work with NCSE. The fruits of this effort are ripening slowly and steadily; as organizations around the country encounter creationist challenges on their home grounds, they will remember hearing from us and call us for help. This kind of outreach is a long term project. We are continually identifying new organizations to approach, and new ways to work with old friends. Can you help? Yes! If you belong to an organization you think should be working with NCSE, let us know about them, or tell them about NCSE.

Meanwhile, the Network Project's scope has grown to include many other aspects of NCSE's work to "win friends and influence people." Our press release announcing the opening of NCSE's toll-free hotline has been widely re-printed. It's working! People are calling both to ask for help and to offer help, and I've been helping Genie Scott to advise people facing creationist challenges in their communities. True to the name of our project, this has often involved putting people in touch with individuals or organizations who can help them. Can you help? Yes! . . . A copy of the press release is included in this newslet-

ter. Feel free to copy and use it where it will do the most good. For example, post it in a teachers' lunchroom, or share it with a sympathetic reporter at your local paper. And if you hear or read about a crisis in your community, call us yourself!

We've also been working with other organizations concerned about the status of TRACS, the Transnational Association of Christian Schools. TRACS is currently certified by the federal Department of Education as an agency that may accredit secondary schools and colleges; the certification was originally granted against the recommendations of Department of Education staff. Not only is NCSE planning to submit comments for the public hearings reviewing TRACS' certification, but we will keep other organizations informed.

The newest offshoot of the Network Project is the FAQs project. The more people hear about NCSE, the more they turn to us for answers to creationist "arguments against evolution." The list of tricky arguments and pseudo-facts grows every day, and we need to put people together with answers in coordinated fashion. Can you help? Yes! . . . Read the accompanying story on "FAQS Facts" (p. 40) and send us your suggestions.

This is a small sample of what I've been doing, and like everything else at NCSE, the Network Project is sure to grow and change in the months ahead. Project News will be a regular feature of *Reports* and in each issue. Besides letting you know what I've been doing, I'll try to suggest

at least one new way that NCSE members can help out.

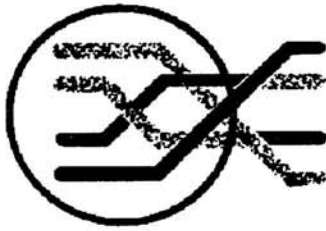
Remember that networking is easier than ever now that NCSE has gone electronic. We've joined everybody's favorite net, the Internet. Those of you who have Internet access can send us e-mail at ncse@crl.com (note: entire address must be lower case). ❖

Sagan Honored

NCSE Supporter Carl Sagan has been voted the National Academy of Sciences' 1994 Public Welfare Medal. The NAS chose Sagan for the honor because of his preeminence as a scholar promoting public understanding of science. "Sagan's name may be associated more with science than that of any other living US scientist."

Sagan illustrates the bizarre dilemma faced by many NCSE members—His peers recognize him as a remarkably productive scholar and teacher, but he has been an enthusiastic popularizer of science, as well. HORRORS!

Last year, Sagan was nominated for NAS membership and was supported emphatically by his fellow astronomers, but some NAS members subsequently managed to derail his nomination. The only interpretation possible was that a few "gatekeepers" blackballed him, because a search of publications, citations, student sponsorship, etc. demonstrate his effectiveness as a scholar. This NAS honor would seem to be a well-deserved recognition, perhaps also in reaction to last year's embarrassment for the academy. ❖



The National Center for Science Education, Inc.
1328 6th Street
Berkeley, CA 94710-1404

For Immediate Release

Dateline:

Contact: Dr. Eugenie Scott 510-526-1674

Hotline to Defend Evolution Established: 1-800-290-6006

The National Center for Science Education has installed a toll-free 'Hotline' -- 1-800-290-6006 -- to help teachers, school boards, parents, and interested citizens cope with pressure against the teaching of evolution or pressure for the teaching of creationism. NCSE is a nonprofit organization of scientists and teachers and a clearing-house for information on the creation/evolution controversy.

"Calls for information have increased steadily over the last two years, so it is clear that there is a need out there that still has to be met," said Dr. Eugenie C. Scott, Executive Director of NCSE. "With the 800 number, it will be easier for people to get the help they need."

Since the 1987 Supreme Court decision (*Edwards v. Aguillard*) prohibiting laws requiring the teaching of creationism when evolution is taught, "Neo-creationism has evolved", says Scott. "Now in addition to regular creationism, we have euphemisms like 'intelligent design theory' and 'abrupt appearance theory.' We also hear teachers being directed to teach 'weaknesses in evolution', which makes about as much sense as teaching 'weaknesses in spherical-earth theory.' In content, these euphemisms are identical to what the Supreme Court outlawed in 1987."

Teachers themselves are the targets of tremendous pressure. "Responsible science teachers want to teach evolution as a matter of professional integrity," Scott explains, "but many are inhibited because principals and superintendents don't back them up when they face pressure from parents." One teacher who called the "Hotline" told Scott that he is a certified science teacher, but because his principal disapproves of teaching about evolution, he was assigned fewer science classes than other teachers with less training. Another teacher told her that when a committee of teachers in his district split over the choice of what science books to use, they adopted the one that downplayed evolution, because then they wouldn't have to cope with complaints from parents.

"This problem isn't always on the front page, but it's always there at the local level," Scott added. "If chemistry teachers weren't allowed to teach the periodic table, it would be a scandal. Not allowing biology teachers to teach evolution is just as basic."

NCSE has been helping combat challenges to evolution education for over a decade, advising and coordinating efforts of concerned citizens and providing a clearing house for information on scientific, legal, and educational aspects of the controversy. With the toll-free number, NCSE can help more teachers and, hopefully, find ways to solve problems before they become full-blown crises. "Our hotline number, 1-800-290-6006, should be on every bulletin board in every teachers' lounge and superintendent's office in the country," Scott said. "Then we'll have a fighting chance of guaranteeing good science education."

NCSE Makes Impact at AAAS Annual Meeting

Yves Barbero

Editor of the California Committees of Correspondence newsletter C³

❖
St. Augustine
thought
searching for
science in the
Bible was
"blasphemous."

❖

It was standing room only as Berkeley paleontologist (and NCSE Board Member) Kevin Padian introduced the four speakers who filled a Sunday afternoon with information around the theme of "Anti-Science and Anti-Evolution." The symposium had been organized by Eugenie C. Scott, executive director of the National Center for Science Education.

This conference was sponsored by the NCSE on February 20th in San Francisco, under the auspices of the American Association for the Advancement of Science. Following the previous day's "Origins" session and that morning's "Current State of Origins of Life Research," the meeting was so well attended that a larger room had to be obtained to accommodate the many interested scholars. Kevin Padian, Integrative Biology Professor at the University of California, Berkeley, in his address, "The Triumph of the Creationist Method," pointed out that creationists often use science's multidisciplinary approach to evolution to pick and choose among the many facts and theories in an attempt to confuse and draw out "constrictions." He offered a thumb-nail sketch of their tactics. After their failure to formally ban evolution, creationists attempted to get "equal time." The courts, firmly rejecting this, were next offered the

novel theory that evolution was some sort of "religion of secularism." The latest assault against good science is the so-called theory of "intelligent design" popular two centuries ago.

On the practical level, Padian pointed out that creationists are increasingly working at the local school board level, where they enjoying many successes. The issue, he emphasized, is one of "academic quality," not censorship. Science education "modules" are an increasingly popular curriculum device where teachers get a big kit (the size of a TV set) on "magnetism," "the solar system and you," and the like. Unfortunately, this compartmentalization divides rather than unifies science. And it offers an easy out for a teacher or school to quietly ignore the evolution module; after all, only a few of the boxes can be opened in a semester, right? students don't see the integration of evolution with the rest of science, in any case.

Francisco Ayala, Donald Bren Professor of Ecology and Evolutionary biology at the University of California, Irvine, and president of the AAAS, as an NCSE Supporter and former priest has long been an opponent of teaching creationism in the guise of science. He testified as an expert witness in the 1981 Arkansas trial over a law requiring equal time for "creation science" in public schools. His talk, "Evolution and Bible: What is the conflict?" was a historical survey of religious notions about origins. Ayala suggested that the purported conflict between the Bible and Darwinism

has no basis in the traditional Christian interpretation of the Bible. Saint Augustine, for example, concluded that no boat could be built large enough to accommodate two of each species, so the Church father concluded that at the time of Noah, not all species existed, "and some evolved later from pre-existing ones." Thomas Aquinas, he added, had no problem with "spontaneous generation" beyond the first six days. Aquinas apparently thought it was the job of science to discover how these things would come about.

I remember two particularly memorable parts of his talk. "The Bible teaches us how to go to heaven, not how the heavens were made," according to Pope John Paul II, and St. Augustine thought searching for science in the Bible was "blasphemous."

Bernard Ortiz de Montellano, Wayne State Anthropology Professor, discussed "Evolution and Multiculturalism." He argued that all people have cosmological myths as part of their religious heritage. "Problems arise when claims are made by their proponents that these beliefs can be proven scientifically, as in the case of 'scientific creationism.'" He supported this with a number of other examples, including an interesting reversal of White supremacy, some aspects of "Afrocentrism," which claim skin color, the darker a person is, is an indication of virtue, or of being a superior human. The scientific-sounding claim is that intelligence can be measured by the amount of melanin in the skin.

NCSE NEWS

Melanin has extraordinary properties, and confers great power on people with a large amount of it, according to this "scientific" theory.

Ortiz de Montellano, a leader in the organization of Hispanic and Native American Scholars, stated that in this age of science, many cultural myths look for validation by science despite the fact that science is not equipped to prove or disprove such notions.

Norman Levitt is a professor of mathematics at Rutgers University. He is the author of *Higher Superstition: The Academic Left and its Quarrels with Science*, Johns Hopkins University Press. In his lecture, "Bewilderment and hostility in the postmodern attitude toward science," he chided the easy acceptance by many academics of almost any theory advanced by minorities or cultural interests as somehow being scientific.

Levitt is a clear proponent of the view that science should at least attempt to rise above cultural concerns and that facts exist whatever the cultural context, and that inter-

pretation of scientific data should not be filtered by partisan ideas.

"Postmodernism has many roots and is kaleidoscopic in its manifestations . . . There is a high degree of philosophical skepticism and epistemological relativism, conjoined with the notion that knowledge is 'socially constructed' by the mores and expectations of the culture," said Levitt. "Thus, 'knowledge,' it is often claimed, is a mode of social authority, a means by which an elite legitimizes and befuddles its underlings. Moreover, it is assumed that the major factors dictating this 'construction of knowledge' deeply involve such categories as gender and race, as well as economic class. Thus, Western culture (and therefore, its appendage 'Western' science) is seen as a particular local historical formation, with no timeless claim to validity, that is destined to slip from its position of dominance rather soon."

Eugenie C. Scott suggested that anti-evolution is a "canary in the mineshaft," alluding to the way canaries were used to indicate gas

leaks in mines. The fumes may be getting evolution now, but the rest of science is also vulnerable. Most "... critics of science and evolution criticize from a serious lack of understanding of how science works, as well as from a lack of some of the basic understandings of the natural world that science has bought us." She went on to say that evolution is viewed as dangerous, even menacing, by some of these recent critics. "For philosophical reasons, or to achieve social and political goals, these critics distort both the nature of science as an intellectual enterprise, and evolution as a scientific principle."

Scott concluded, "The next generation of scientists is being exposed to these ideas, but more importantly, so too is the next generation of voting, technology-using citizens. As science is largely dependent upon society for its support, it behooves scientists to take these challenges seriously, and strive first to understand them, and then counter them with accurate information on the nature of science and evolution."

❖
Anti-evolution
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in the
mineshaft."
❖

Lemur Evolution Grant to NCSE's Godfrey

Board member Laurie Godfrey, professor of anthropology at the University of Massachusetts at Amherst, has been awarded a National Science Foundation research and travel grant, "Dental Development in Fossil Lemurs: Phylogenetic and Ecological Interpretations." During the 1994-1995 grant year she will

be Visiting Professor at SUNY-Stonybrook, teaching one course there in the spring but otherwise devoting her time to the grant-sponsored research which will include work at various laboratories and museums and travel to Europe and Madagascar.

Congratulations! ❖

If my theory of relativity is proven successful, Germany will claim me as a German and France will declare that I am a citizen of the world. Should my theory prove untrue, France will say that I am a German, and Germany will declare that I am a Jew.

—Albert Einstein

E-Mail for NCSE

John Cole

NCSE is increasingly online for computer fans. We have already joined Cleveland FreeNet, where back issues, indices, etc. are posted.

Now the national office is online at

ncse@crl.com

And your editor is online at
jrc@tei.umass.edu,
as before.

I (JRC) still cannot receive long ms. very well—I cannot yet transfer major files, but I can receive letters, questions, short items. . . . My “day job” is not NCSE, so I cannot always respond rapidly, and I do not have home computer communication capability because of my non-digital quality party-line.

Neither of these online addresses is a bulletin board or instantly interactive locale, so responses will not be instantaneous or “chat” mode. Communiques should be in ASCII, DOS format.

In case you have no idea what the above sentences are about, don’t worry—NCSE will continue to operate via “snail mail” (post office, etc.), phones, personal interactions, printed newsletters and journals, etc., showing up to argue when we need to, etc. But we are also moving along with the technological revolution in order to counter the rather bizarre creationist “back to basics” movement attacking the bases of modern science (skepticism, for example!) using computer technology! A handful of creationist techies are miles ahead of evolu-

tionists in using computer information technology to push their message; we are on the case and not conceding any ground.

Suggestions are strongly solicited—How can we best counter creationists’ efforts to dominate the electronic information highway? How do we do it—and how do we pay for it?

Individual responses to myriad computer bulletin board or e-mail arguments must continue, but how can we respond in a more organized fashion, reaching millions, not just accidental tune-ins to obscure electronic messages—which then get quoted to school boards or publishers? ♦

Help Wanted: FAQs Facts

Molleen Matsumura
Director, NCSE Network/CC
Project, Berkeley

Readers who like to play with computer programs or on computer bulletin boards are familiar with the acronym “FAQS.” It stands for “Frequently Asked Questions.” We get plenty of those at NCSE, and when we do, of course we want to answer them with the straight facts.

Questions come from many directions: On one day, a letter arrives from a science teacher who attends a creationist lecture to hear what her students are hearing. She hears a hail of miscellaneous factoids and criticisms, from the claim that there ought to be more dust on the moon to the assertion that *Archaeopteryx* co-existed with true birds. How, she wants to know, will she answer them all? On another day, it’s a bulletin board message asking, “I was debating a creationist who wanted to know how chromosome counts could change in the course of evolution, and I didn’t have the answer. What is

it?” NCSE needs to start a library of FAQs Facts—a set of information sheets and uploadable text files to share with every supporter who needs to answer confusing questions with hard facts. Some of these will be featured from time to time in *NCSE Reports*.

Please help us get started. Let us know the questions and arguments you hear most often. If you’ve developed some effective standard answers, send those too, and we’ll collate them with other answers.

Go electronic, if possible, and send your answers as text files on DOS compatible diskettes, or by e-mail to ncse@crl.com (note — address is case-sensitive; type as you see it here).

In an impossibly short amount of time, quicker than a whirlwind assembling a B-52 airplane in a junkyard, we’ll try to have the definitive library of FAQs Facts (subject to revision, of course, like everything else in science)!?? ♦

❖
Let us
know the
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and
arguments
you hear
most often.

❖

NCSE NEWS

NCSE Offers New Service

Jack Friedman

There are always times when someone needs to be remembered. Whether it's a graduation, promotion, get well wishes, or any congratulatory message that you want sent, NCSE can provide you with a choice demonstrating your good wishes which has no calories, won't wilt in a day or two and will keep on being useful long after batteries might wear out. Also, sometimes when a friend or acquaintance dies and you wish to express condolences, you may want to do something more meaningful than send flowers. NCSE offers a service to help.

A contribution to NCSE can be a useful salute to whomever you wish to honor.

Let us know, and we will notify the designated person or family that you have sent a gift to NCSE in their name. We will also send you a receipt for your records to show the matter was handled promptly. A donation envelope is enclosed with this issue of *Reports*. If you don't need it this month, stash it away and use it soon.

Many people appreciate a contribution made to an intellectual and academic cause rather than spent on ritual flowers or candy. In addition, it is an opportunity for you to support science education.

And all donations are tax-deductible.

If you have any questions or would like more donation envelopes, please call me at (516) 921-5522. ♦

NCSE's 800 "Hotline"

Now NCSE has an 800 number that people needing information on the creation/evolution controversy can call.

The NCSE "Hotline" is

1-800-290-6006

The 800 number should make it easier for teachers and parents to contact us for help, and it also makes it easier for NCSE members to renew their memberships and purchase books and other materials conveniently. (It is not free, though—your "self-subsidized" calls to 510-526-1674 are also appreciated.)

Florida Creationist to ICR?

Eugenie C. Scott

Pensacola, Florida creation evangelist Kent Hovind spoke recently in San Diego. Rumor has it he is "interviewing" for the Institute for Creation Research job formerly held by Ken Ham. Ham was the driving force behind the ICR's "Back to Genesis" programs, during which the creation science "message" reached hundreds of thousands of citizens over the last few years. Ham has recently left ICR to found his own ministry (see related story, page 32).

Hovind and I appeared on a radio call-in program in November 1993. According to his information sheet,

he holds a Bachelor of Religious Education from Midwestern Baptist College in Pontiac, MI. He also claims a Masters and Ph.D. in education, but does not list the institutions. He is a staunch young-earthier, and he repeats most of the familiar arguments. He offers \$10,000 to anyone who can offer empirical evidence that evolution has taken place.

Hovind has appeared in the pages of *NCSE Reports* in a story written by John Cole (13(2):9). We reported on a *Peoria Journal Star* article wherein Hovind stated he was preparing to debate Stephen Jay Gould. When contacted, Gould denied any knowledge

of this event. Confronted with this information, Hovind apologized to Gould, explaining that he had been misinformed by a contact in Massachusetts who claimed to have arranged such a debate. Hovind has not claimed any more upcoming debates with Gould. Case closed. ♦

Huxley said, "life is too short to occupy oneself with slaying of the slain more than once."

LETTERS

Bible Answer Man

Correspondent Frank Steiger cites the Christian Research Institute as a powerful opponent of science and reason (*Reports* 12(4):7, 1992). It was not always so. The original "Bible Answer Man," Walter Martin, concentrated on theology, citing Scripture against claims of a common Christian heritage by what he called "non-Christian cults." After Martin's death in the late 1980s, his successor Hank Hanegraff has pushed CRI into politics and dubious "science."

Hugh C. Cunningham
Sommerville, MA

Other Creationists

As a public school teacher and evangelical Christian, I have been interested for some time in the evolution-creation debate. Wanting both sides of the issue, I subscribed some months ago to *NCSE Reports* and have read 3 or 4 of them. Correct me if I'm wrong, but it seems that the evolutionist's primary (seems like only) target is the young-earth "pseudo-science" of creationists. I too believe these arguments are foolish and unnecessary. If God wrote the Bible and created the Earth, then an honest investigation of each ought to reveal the hand of the Creator. The problem is that creationists and evolutionists alike start with presuppositions and then marshal facts to support them. True investigation should [do] the reverse.

My question is, why don't I read much about old-earth creationists—especially the

brilliant scientist Hugh Ross and his prodigious output of factual support for creation? Or agnostic scientists such as Michael Denton and his *Evolution, a Theory in Crisis*. These men offer profound arguments that cannot be ridiculed. Why don't you follow them around and critique their arguments? Is the goal of evolutionists simply to advance their beliefs or to get at the truth? I think the evolutionist community is justified in ridiculing the young-earth theory but remiss in not tackling head-on these other valid arguments.

Greg Switzer

Ed: We do track other "creationist" ideas, but NCSE is more concerned with the "young-Earthers" who want to take over science classrooms, unlike (usually) the "old-Earth" or theistic evolutionists/creationists; NCSE is not in the theology biz. A review of "Krsna Creationism" is forthcoming, for example.

Anti-private school?

I am disturbed by your apparent wholesale opposition to voucher systems and the privatization of public education. While proposals that include religious schools in voucher systems are unconstitutional, and deserve to be defeated, don't throw the baby out with the bath water. Private secular schools do a fine job of teaching evolution as well as the three R's. I wonder if paleontologist Stephen Jay Gould (a Marx-

ist, incidentally) thinks that his students at Harvard are getting a bad education because they are going to a private school. The quality of education at our public schools is very uneven and too often abysmal. Privatization could serve the purposes of NCSE, but less so if the only people crafting voucher plans are those trying to subsidize religious schools. If we equate private schools with parochial schools, then night mares of fundamentalist religious schools living on public funds may become a self-fulfilling prophecy. NCSE has better things to take aim at than private education.

Mark Hoadley
Johnstown, PA

Ed: Several articles have been critical of voucher plans which would subsidize religious education and schools without sound science curricula, not all private schools. There is a second issue, however, in that NCSE writers have indeed tended to support the concept of the "common school" and the need to avoid turning public schools into repositories for people who cannot get into private schools because of handicap, poverty, etc.

More Ammo, Please

I do love *NCSE Reports*. The layout is professional and eye-grabbing. The news bits and comments on creationist activities is a favorite part.

One thing I miss, however: the old *Newsletter* provided more in the way of ammunition to those who

battle creationism in the trenches—in classrooms, newspapers, computer nets.

Let's have more of the old point-counterpoint. I hope *NCSE Reports* will try to outline and respond to more of those creationist arguments. And not just the shopworn chestnuts about fossil gaps, thermodynamics or lunar dust. Break new ground.

What about creationist astrophysics, for example? A friend sent a video of Dr. Kent E. Hovind, an especially slick creationist propagandist. Arguing for a young solar system, Dr. Hovind disputed the mainstream (accreted nebula) theory, making much of how Sol rotates contrary to all the planetary orbits, violating conservation of angular momentum. Intriguing. As a non-astrophysicist, I have no way to respond. Is it even true? None of my references either confirm or deny it.

Likewise, a creationist friend once argued that galactic arms would not exist in an old universe. The outer stars of a spiral galaxy move more slowly, or course, so the system should smooth itself within a few rotations. At the time, the argument seemed devastating. Years later, in a private correspondence, Frank Sonleitner explained how galactic spirals are unconnected to particular stars, and seem to be caused by gravitational shock waves rippling through the disc. Better. But I am not entirely clear on the process, and would be happy to see an article about it for the layman.

In closing, I encourage your writers to examine and

LETTERS

respond to a wider variety of creationist arguments. In fact, I would love to see a regular column that explores and dissects a few of these each issue. It would make for lively reading, and help me immeasurably, in this ongoing battle.

Kenneth E. Nahigian
Sacramento, CA

Ed: You're right about the need to counter specific creationist claims. This was the goal of the "Tracking..." column which may have strayed from this goal, growing too long and verbose for some purposes. C/E tackles the "long" issues, but beginning with the next Reports we plan to include a short Q&A approach to questions. As-

tronomer David Morrison and others have volunteered to help. We'll try to answer specific questions briefly—which means we need questions as well as people willing to answer a bit more a la Ann Landers than Nature! C/E will remain the more detailed and footnoted, analytical forum, but there are a lot of things which do

not need a journal article as a response. On a very simple level, I get questions such as "Has anyone researched X," or "What measurements relate to Polonium?"

So stay tuned—and send questions!! ♦

Vista, CA, Update

Eugenie C. Scott

Vista, CA, the "poster child" school district for religious right take-overs (see *Reports* 13(2):1,) made the news again in March, as its school board voted in the usual fashion to adopt an abstinence-based sex education program that has heavy religious overtones. "Sex Respect" is already under legal challenge in neighboring districts. The Vista school board majority also voted to replace its staff attorney with one from the Rutherford Institute, an organization active in defending anti-abortionists and other conservative causes.

The attraction of having a conservative lawyer represent the district is clear: there is much case law against the teaching of religious creationism or creation science. Lawyers would normally advise a school board to avoid becoming entangled in creation-evolution cases on the grounds that the district would have to spend a great deal of money (as is true of virtually all legal cases) and would inevitably lose. Lawyers for religious-right oriented organizations such as the Rutherford Institute, the American Center for Law and Justice, and/or the national Legal Foundation are more willing to take cases of this sort and argue them. NCSE has run into this "call a new lawyer" argument in other areas, notably Tangipahoa school district in Louisiana (see p. 4). This seems like a good way for

a district to waste ever-decreasing resources that could be better spent for the education of children.

The board has also approved a course in comparative religion, but John Tyn-dall, accountant at the Institute for Creation Research, proposed that secular humanism be taught as a religion. This provision was voted down. Citizens of Vista attempted to accumulate enough signatures on a petition to recall the three religious-right board members, but did not acquire sufficient numbers before the deadline for the spring election. They are continuing to collect signatures until this fall, when a normally-scheduled election will be held. Conservative board president Deidre Holliday is up for reelection anyway, and the plan is to try to recall the other two thirds of the new majority. ♦

Crank Letters

A professor at MIT has devised a foolproof way to handle crank letters. One day he received a communication from crank #1 which contained what purported to be a scheme for trisecting the angle. Several days later he received a communication from crank #2 containing a scheme for solving Fermat's last theorem.

He replied to Crank #2: "Thank you for your interesting recent communication. However, I am far from being an authority in this area. You should contact the following person, who has much more expertise than I." He then listed the address and name of Crank #1.

Anonymous Internet message
from "Jet Wimp," Dept. Math.
Comp. Sci. Drexel University.

Naked Ape Theory

According to a UPI report, a Texas supermarket chain banned sale of the November issue of *Discover* magazine because the cover featured an artist's reconstruction of 3.2 million year old Australopithecine "Lucy" and cohorts. And they were unclothed (although furry). Minyard's Foods said this violated their policy of running "family-oriented" stores. The chain of 77 stores has banned other magazines for risqué covers, but this was the first time *Discover*, published by the Walt Disney Company, had been prohibited. The magazine's circulation is normally 150,000 per month—plus a few extra in Texas towns where it gained status, perhaps? ♦

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