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Florida Creationism Battle

Glen P. Goffin

For a few emotionally charged weeks this spring, Central Florida's Lake County Public School Board stole the show from its famous neighbor, Disney World. A county famous for its gorgeous environment, retirement communities and neighborly populace was suddenly thrust into the glare of state and national attention. In a sincere effort to represent their constituents, three of the five school board members helped turn the entire county into Creation-Evolution World with their support for creationism in the public schools.

In Fall 1990, in a political upset, a Christian fundamentalist was elected by 12 votes. Her son was currently attending a

private Christian school. Her election energized many of the over zealous members of the county's 147 Protestant congregations (in a county with fewer than 155,000 population).

In her first few months of tenure she unsuccessfully attempted to remove materials on human growth from the school system, opposed health clinics in district schools because they *might* offer birth control information, and opposed two children's books that portrayed a happy witch and a father who joked by quacking like a duck because they implied

Florida, continued on p. 5

California Creationist Teacher Sues District

Eugenie C. Scott

On May 31, 1991, John Peloza, biologist at Capistrano Valley High school in southern California, filed a \$5 million lawsuit against the Capistrano Unified School District for slander, libel, invasion of privacy, and violation of his academic freedom. Peloza had been reprimanded by the district after complaints from parents and students that he had been proselytizing students as well as teaching "scientific" creationism. In the reprimand, Peloza was instructed "to stop teaching his students that man was put on earth by an intelligent creator, and instead to follow district guidelines requiring that evolution be taught as the scientific explanation of the origin of man" (*LA Times*, 5/16/91.)

Peloza claims "Evolution is a state-sponsored religion paid for by the taxpayers" (*Orange County Sues, continued on p. 6*)

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You're reading a newsletter in stylistic transition, and I hope you like the changes. In any case, the contents will, I hope, calm the ire of anyone who, for example, hates right-justified text; it is my experience that the world is equally divided between people who love and despise ragged-right column margins—while an even larger segment of the public doesn't actually care.

In the last issue potential reviewers were solicited for both books and manuscripts—especially for *C/E* journal but also for *Reports*. Our thanks to a number of people who have responded, and more volunteers are invited.

Our objective is to develop a file of expertise for reference, not necessarily to find a reviewer for a book or manuscript on hand. We want to plan for the long haul, not saddle a couple of volunteers with a pound or two of material by return mail!

Please accept this note as a thank you in lieu of a personal reply. And remember—we need manuscripts, articles, etc., not just reviewers! Manuscripts, letters, and suggestions *are* beginning to trickle in for *Reports*.

A new journal issue will be published in early Fall, and contributions are needed. We have received a large box of manuscripts from the previous publisher, some of which we plan to use. Many of these are extremely dated, however—some go back almost a decade! Some are incomplete, some are lacking authors' names and/or addresses, and others are similarly unusable for one reason or another. We are in the process of sifting through this material now and will be in touch with those of you whom we can identify about the disposition of your manuscripts as soon as possible and ask your forbearance meanwhile.

While we are not starting from scratch, the journal *is* “under new management” quite literally, so policies and practices will change a bit. The next journal issue will publish detailed instructions for authors. They are available from the editor or the NCSE office in return for a stamped, self-addressed envelope. A couple of basic rules, meanwhile: send an original and two copies (for reviewers) and type double spaced on non-erasable, non-onionskin paper with ample margins. DOS-compatible diskettes are *very* welcome—in any version of WordPerfect, WordStar up to 5.5, ASCII. Other word procesors *may* be decipherable, but we alas cannot translate Apple output, so far.

We have heard a lot of dissatisfaction with the name “*Creation/Evolution*” for the journal. These range from grammarians who object to the slash-mark (which suggests that the words on either side are actually interchangeable) to concerns that the seeming emphasis is religious rather than scientific (and the journal *is* typically catalogued in libraries in the religion section). Suggestions of possible new names are heartily invited. We have no plans to change our basic “niche” as *the* source of information on the scientific responses to antievolutionism, but we want to be clearly pro-evolution as well as critical of creationist claims. So please—let us know your ideas for new titles. (Both *Science* and *Nature* appeal to me, but they are, unfortunately, already taken.)

John Cole

Letters

I have just received my first copy of *NCSE Reports*. (I was receiving the *Creation/Evolution* journal.) Thank you for assuming its publication. I received a mailing from the NCSE several months ago but never got around to doing anything about it. I can see from Volume 11 Number 1 that I have been missing an important resource in my study of creationism that I started nine years ago. Thank you for your efforts in defense of scientific integrity.

Prof. Stephen J. Shulik
Geography/Earth Sciences
Department
Clarion University
Clarion, PA

Thank you for taking on the NCSE editor's job. . . . Unfortunately, I have a suggestion that may cost some time and effort. Would it be difficult to include the addresses of authors? For example, I would like to write to B.T. Lepper and congratulate him on his good work [in Ohio letter-writing] described in the previous issue of *Reports*.

Ralph W. Lewis,
Professor Emeritus
Center for Integrative Studies
Michigan State University
East Lansing, MI

Editor: I agree and will try to ease such a practice into place for other than brief notes. Institutional addresses or affiliations will be showing up now; however, not everyone has an "institution," and there is a potential problem of invasion of privacy which makes me reluctant to publish home ad-

resses which I will not do unless specifically authorized. Not all letters received can be published, but at least in this case your kudos will be passed on via print!

Thomas H. Jukes, in his article "Pseudogenes—A Problem for Creationists" (11[1]) wonders what the creationist explanation might be for pseudogenes.

On January 11, 1990, Frank Zindler brought up the subject in a radio debate with creationist Duane Gish (WTVN-AM, Columbus, OH). Dr. Gish was completely ignorant of the nature of pseudogenes, and when Mr. Zindler explained what they were, Dr. Gish replied, "That's nonsense!"

I suppose that's as good a creationist response as any.

Joyce Bowlsby
Vancouver, B.C.

Note: A transcript of the Zindler-Gish debate is available for \$5.00 from NCSE. See centerfold.

Your November '90 issue refers to "the coming into being . . . of the universe" and "the origins of the universe," as though the universe were not everything that ever existed. I am disturbed by scientists and science writers who use such terms without explaining them. I don't understand how the universe could have begun, or could end, or could have limits, because there is always plus one in space and minus one and plus one in time. What science book denies that nature abhors a vacuum and denies

that matter/energy cannot be created or destroyed?

Mark K. Stone
Philadelphia, PA

Editor: Cosmogenesis is a thorny topic probably treated too glibly by some of us at times, but it is addressed by serious researchers. Readers are referred to the best-selling book, A Brief History of Time, by Stephen Hawking, as an example. On the writer's last point, we would note that modern physics asserts that matter and energy can neither be created nor destroyed by ordinary physical/chemical means since the Einsteinian revolution modified Newtonian physics.

"Modern Creationism and the Ghost of Gosse" (11[1]) awakened many memories. When I was an undergraduate at Harvard majoring in English literature, Edmund Gosse, the son of the author of *Omphalos*, was a major literary figure. His autobiography *Father and Son*, which his father dominates, is still considered a minor classic.

Long ago it occurred to me that though I have often heard reference, usually humorous, to whether Adam had a navel—I have never seen any discussion of the fact that Adam and Eve started out with a complete mastery of language. This capacity, ordinarily learned gradually from parents and others in the first years of childhood, requires a richer past than a navel does and makes us appreciate Gosse's dilemma. Even the serpeant, it turned out, could talk.

"Let there be light" is the first recorded speech in the Bible, although there was no one there to hear it except God himself. [Later when Adam hid from God because he was] "naked," God challenged him by asking "Who told thee that thou wast naked?" The word Adam used was more revealing than the fact it stood for.

Robert Gorham Davis
Cambridge, MA

Thanks for your very reasonable comments following the letter from Dr. Shanavas in the last issue.

Gordon E. Peterson
Arcadia, CA

Donal G. Myer Dies

Donal G. Myer, president of the Illinois State Academy of Sciences, died unexpectedly in August 1990. Dr. Myer was a professor at Southern Illinois University at Edwardsville. A respected scientist and educator, Myer was the leading force behind the Illinois Academy's drafting and endorsing its resolution against the teaching of creationism in the public school science classroom. This resolution takes on new importance now that Peoria and other school districts in Illinois are again moving towards the "equal time" approach and some academics are refusing to get involved in school affairs.

Creationism in Many Illinois Schools

*condensed from a
report by
Ransom R. Traxler
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St. Louis
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On 2–3 November 1990 I attended the Illinois Science Teachers Association where I gave two presentations on the creationism issue and also manned a SLATE information table. My presentations were open discussions, and the audience included members of the state Board of Education. Also in the audience was Mr. Harlan Wentzel, a creationist whom I identified and to whose talk I invited my audience for “another opinion.”

Mr. Wentzel is a teacher at Maryville Elementary in **Collinsville** near St. Louis. Before his two ISTA talks I spoke with him by telephone, and he said “Of course I’m a creationist. I teach my students creationism every chance I get. I don’t give them the religious stuff, but I tell them things like the data show that things were created and did not occur by accident. . . .”

His two presentations were on the astronomical evidence for Noah’s Flood and a rambling discourse on design and the young earth. He introduced himself by saying, “I don’t have a degree in science, but neither did Darwin. I attended a seminary school, just like Darwin. The only difference between Darwin and me is that I haven’t sailed around the world in a little boat.” He distributed religious anti-evolutionist literature from the Bible-Science Association along with a sign-up sheet for people wanting a free copy of the *B-SA Newsletter*. He made the usual series of B-SA claims from Nebraska Man and Peking Man to Piltdown, concluding with the suggestion that anything said by an evolutionist was untrustworthy. Many in the crowd walked out as he went on.

On 16 November I called his school principal Dr. Shari Marshall. I identified myself and said I was writing this report on Mr. Wentzel’s talks. Our conversation went as follows:

I: *Are you aware of Mr. Wentzel’s teaching creationism?*

She: *Oh, Yes. We let him present creationism as an alternative to evolution in our school.*

I: *Does he teach religion to students?*

She: *Oh, no. He doesn’t teach religion. He teaches creationism.*

I: *But creationism is religion.*

She: *Creationism is not science, it’s a religion?*

I: *Yes.*

She: *Then goodbye! (Click)*

About an hour later I received a call from Dr. Fred Bloss, director of curriculum for Collinsville School District #10.

He: *I got an upset phone call from Dr. Marshall, and I’m calling you to see which side you’re on.*

I identified myself and told him that I was also a science teacher. I asked him his position.

He: *I believe that creationism is a scientific theory just like evolution.*

I: *Is that being taught in your school district?*

He: *Whenever origins are discussed, we present all scientific theories, including creationism and evolution.*

I: *Is that a school district policy?*

He: *Yes, for all our schools, grades K-12. We make sure our curriculum and textbooks reflect this policy.*

I: *What textbooks do you use?*

He: *I don’t know—I’m not a teacher.*

I: *Did you know that the Illinois Academy of Science and Illinois Science Teachers Association recently passed resolutions declaring that creationism was not science but religion?*

He: *Well, that’s their belief.*

I: *Can I have what you just told me in writing?*

He: *I have to speak to my Superintendent first.*

I immediately asked the Superintendent, Mr. Renfro, for a reply, but so far I have not heard from him. A parent of three in the school district told me she was aware that evolution was not taught but was surprised to hear that creationism was. She advised me not to press the matter for fear the creationists would dig in and fight more fiercely. “In 20 years the school district will come around and the problem will solve itself if you leave it alone.”

The situations in **Peoria** and **Morton** have already been reported on extensively, and we are continuing to look into them. Morton officials have not responded to my queries, but a member of the State Board of Education said that Morton was even more conservative than Peoria, and I was told by a teacher in that county that all the schools there favor creationism over evolution.

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Oh, no. He
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creationism.

New Lennox figured in an important legal victory for science education. A US Appeals Court upheld a District Court ruling in *Webster v New Lennox* which defined the teaching of scientific creationism as "religious advocacy."

A visitor to our ISTA table said help was needed in **Macomb** where a public school teacher has been teaching creationism for ten years. Macomb is the home of Western Illinois University.

Terrence Mondy says he has been teaching creationism in his suburban Chicago school for

several years with the approval of the school district. ISTA officers are very upset to learn that they have been advertising his creationist videotape and that Mondy was claiming ISTA endorsement. I was told that the ISTA would take action to change this. Mondy says his video (which he calls his "ministry") has received reduced advertising rates from the National Science Teachers Association and has been advertised by the American Association for the Advancement of Science. I have not confirmed these claims. To my knowledge there has been no opposition to his activities within his district. □

Florida *continued from p. 1*

approval of witchcraft and disrespect for the traditional family.

In April 1991, approximately 150 Christian fundamentalists attended a scheduled school board meeting. A recent arrival to the county who described himself as a minister arose and requested that the Genesis account of creation be taught in the schools. The fundamentalist board member, supported by a well-orchestrated pro-creationist audience with a slate of "scientific" creationist speakers, was able to convince two of her four colleagues to vote with her on scheduling a May 13th public workshop to further discuss the matter.

From then until the actual workshop, the local media were inundated with articles and talk shows expressing views on "The Theory of Creation Science versus The Theory of Evolution."

Almost overnight, lobbying groups formed, polarizing the community and attracting statewide media reporting on the impending "Florida Scopes Monkey Trial." Soon, national groups were counseling both camps. By the evening of the May workshop creationists and evolutionists from the entire state and beyond were assembling in the auditorium of the Eustis Public High School. Plainclothes police monitored the crowds. The Orlando affiliates of CBS and ABC television had their lights and cameras ready.

At 7:00 P.M. on 13 May, the Lake County School Board and its advisors seated themselves before an estimated 550 extremely motivated citizens. After some preliminary negotiations to determine

how much time would be allotted to each speaker and to members of the audience, the initial salvo was launched by the creationists. Based upon the number of people who leaped to their feet applauding and cheering after each creationist spoke, it seemed the audience was about 10 to 1 in favor of teaching "scientific" creationism in the public school science classrooms. It also seemed that a disproportionate percentage of the audience came from the new board member's district rather than the other four represented by the county board.

The meeting lasted almost four hours without a break.

One audience member received an overwhelming ovation when he stated that the issue had nothing to do with the teaching of creation "science" or evolution but rather that the issue was acceptance of God as creator and the teaching about Him in our public schools.

Perhaps unknowingly, this man's personal integrity did more to expose the real issue than all the experts put together. His comment unmasked creation "science" for what it is—the advocacy of a specific religious belief. No matter how hard "scientific" creationist leaders try, they will never be able to separate themselves from their roots as evangelists for their "correct" religious doctrine.

On 14 May, the board voted 4 to 1 against teaching "scientific" creationism in science classes. No one has objected to dealing with the topic as part of a curriculum on comparative religions, but this suggestion has not won fundamentalist support. □

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NCSE's active
role:
next issue
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Sues *continued from p. 1*

Register, 6/2/91), and argues for his right to teach “evidence both supporting and refuting evolution.” As discussed in *Reports* (9[2]:14,15), “evidence against evolution” is a relatively recent creationist buzz-phrase for “scientific” creationism.

Peloza contrasts the “intelligent design theory” (see *Reports* 10[1]:16–18) with “chance” (i.e. evolution) supposedly to encourage critical thinking. From reports, he is careful not to mention the Bible in class, though he has given students Bibles outside of class, and allegedly told a Jewish student that if she did not accept Jesus, she would go to hell.

Peloza is also suing the Capistrano High School student newspaper, *Paw Prints*, over an editorial column written by student Emily Long which he claims defames him. Long had stated that students were “intimidated” by Peloza, and that a student “feared her grade would drop in Peloza’s class because she was a different religion from her teacher” (*LA Times*, 5/16/91, p. A16.) Other students at Capistrano High have formed a “Good Christian Cougars” group that is rallying support on campus for Peloza. Christian parents have collected over 2,000 signatures demanding the district rescind the reprimand.

If the district declines to pay the \$5 million, which is likely, Peloza and his attorney, Rutherford Institute’s Cyrus Zal, promise to file a lawsuit, presumably in Federal District Court, on first amendment grounds. □

Complete Your Back-Issue Collection of *Creation/Evolution*

All 28 issues are still in print (or reprinted) and available from NCSE. Articles cover the major areas of controversy between scientists and creationists—in science, education, law, religion and culture. New subscribers often order entire back-issue sets—at a discount.

A few highlights of back issues (full details on request):

- | | |
|--|---|
| I—Why Creationism should not be taught:
legal issues | XIX—Human evolution and the fossil
record |
| III—Education issues; Bombardier beetle
myth exploded | XX—A creationist tour of the Grand
Canyon |
| IV—Evolution & thermodynamics | XXII—Creationism & the New Right; Po
Halos |
| VI—Misquoted scientists respond | XXIV—Gap theory; Evolution of
Tennessee antievolutionism |
| VII—Carbon-14 dating | XXVII—Creationism vs. archaeology;
Folklorist analysis of creationist rhetoric |
| XI—Noah’s Ark (special issue) | |
| XV—Paluxy River footprints (special issue) | |

One to 9 issues: \$5.00@; 10 or more: \$4.00@; all 28 back issues: \$75.00. Add for shipping and handling: \$1.00 for first issue and \$0.50 for each additional issue up to a total of only \$6.00 maximum shipping expenses—even for the whole set. Send your check to NCSE, P.O. Box 9477, Berkeley, CA 94709. (Institutional purchase orders are accepted.) California residents add sales tax.

News

Creationist Henry Morris "Reviewed"

Jim Cherry, M.D.

I've never debated or written about "creation science." So you may consider my perceptions as those of a fringe watcher [and perhaps] a little different perspective.

Dr. Henry Morris spoke March 14, 1990 at the Lakeview Baptist Church in Cave Springs, Arkansas (population 74) and the following two nights in a much larger town at Immanuel Baptist Church, Rogers, Arkansas. He impressed me as a very sincere person. He presents an elderly, wise, grandfatherly type of image and appears intelligent and articulate. [My preconceived image] of a Jimmy Swaggart type was totally wrong.

For the three lectures I attended, I would estimate the churches were about two-thirds full each night—[perhaps] 50 in Cave Springs and 250 in Rogers. The great majority appeared not to be well-informed in the sciences. Despite this handicap, some parishioners at times appeared not to accept everything he said. For example, one gentleman said he had found a clam shell three feet in size at the 4000 foot level of a California mountain and asked how it got there. He did not appear satisfied with Morris's vague explanation of continents rising and lowering during the Great Flood.

A group of about ten strong supporters sat in the first two rows directly in front of the pulpit [and voiced] occasional loud "Amens" in response to [popular comments]. About 20 people stayed after the lecture for the question and answer sessions in Rogers.

Some of his remarkable statements:

- Mammoths lived in a subtropical climate, not in an ice age.
- Geologic stratigraphy has no relevance.
- Aristotle and Plato were humanistic philosophers and evolutionists.
- Noah had dinosaurs on the ark, because the book of Isaiah [mentions] Behemoth and Leviathan which he believes are a dinosaur and plesiosaur.

To his credit, Morris did say that a tooth found near Glen Rose, TX, was a fish tooth and not human. When asked about the "man tracks" there, he said their status was very controversial and the ICR was

maintaining a "hands off" policy. A woman mentioned "It is rumored scientists may have perpetrated fraud by 'growing' claw imprints on some of the feet." Dr. Morris answered no—that he felt this was not true.

The great majority of the audience and Dr. Morris could not properly separate science from religion; the physical from the metaphysical; the natural from the supernatural. When mixed, confusion reigns. [Morris stated] "A very literal interpretation of the Bible is the framework. Into that framework all scientific data must fit."

The challenge of today's science teachers is to help students know what science can do as well as its limitations [such as not necessarily satisfying spiritual needs, for example]. Students need to learn to ask the right questions, such as those posed by ancient Greeks such as "Why do I think what I think?" If Dr. Morris really examined this question alone, he would once again be a theistic evolutionist. □

Massachusetts Bill Would Forbid "Modernizing" Religious Beliefs

A bill introduced in the 1991 Massachusetts legislature would make it "a crime against humanity" to satirize or "modernize" religions or religious figures. A fine of \$10,000 to \$50,000 and a year in prison would be the punishment for each offense.

Designed to punish or prohibit "blasphemy" such as Martin Scorsese's *Last Temptation of Christ*, the bill would prohibit any public reinterpretation of "traditional religions." It would be illegal to "distort, change, invert, [or] 'modernize' in appearance" religious figures and texts about them.

Would teaching evolution be illegal? Some people consider it blasphemous, so presumably it could be banned. Biblical scholars producing new translations to eliminate sexist language would also seem to be vulnerable. While these are not the expressed targets of the legislative sponsors, they are as vulnerable as anyone else.

The Massachusetts Civil Liberties Union has denounced the bill as patently unconstitutional and unlikely to hold up to legal challenge if passed. Passage is unlikely, although it does have bipartisan support in the state House of Representatives. In March it was being considered by the Judiciary Committee.

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~

A Review of Presentations by Dr. Dimitrij Kuznetsov, October 10 And 15, 1990

Gaynor C. Wild

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[He]
“converted,”
he says, to
Theism
eight years
ago and to
creationism
in 1988.
~

I was able to attend two of Dr. Dimitrij Kuznetsov's talks, one given to “New Mexicans for Science and Reason” on October 10, and one presented in the Anthropology building October 15th sponsored by the departments of Biochemistry, Cell Biology, and Biology at the University of New Mexico as an exercise in “free speech” rights. His intent was to be nontechnical in the first talk. A total of three faculty members and two graduate students from the sponsoring departments attended his second talk, according to my count. Both of my colleagues got fed up and left before the end, leaving me and the graduate students to remain throughout.

Dr. Kuznetsov made several specific, technical statements about his own experiments and about biochemistry. His biochemistry, on the whole, was quite bad, being sometimes out of date, sometimes incorrect, and sometimes misleading. (His only published work available for examination at UNM was also quite bad.) Meaningful comparisons between species must be made primarily at the level of the entire organism, not for single proteins. He was approaching the issue from the wrong direction, so his “facts” would not support his conclusions even if accurate.

Kuznetsov works at an applied toxicology laboratory in Moscow and was presented as holding three doctorates—M.D., Ph.D., and D.Sc. He is no longer a communist, having “converted,” he

says, to Theism eight years ago and to creationism in 1988.

Speaking on his view of creationism, he focused entirely on biochemistry and one particular supposed refutation of evolution—the issue of homology. He declined to speak about any other tenet of “scientific” creationism such as age of the earth or the Great Flood, saying he was not an expert in those areas. What he called his “Homology Principle,” which he claimed “all” evolutionists accepted, appeared to be something like this: “The more closely related two species are, the more identical all molecules within them must be.” Further, he seemed to believe that any exception, however small, would invalidate all of evolutionary theory. He then stated his principle claim against evolution—that a particular enzyme, Creatine Phospho (*sic*) Kinase, showed the greatest structural similarity between the Housefly and the African Elephant.

Dr. Kuznetsov's only other major biochemical argument appeared to be directed against the laboratory technique of nucleic acid hybridization. This method, developed by a biochemist at the University of Illinois in the '50's, has been heavily used in molecular biology, and a great deal of experimental data derived from it was published in the '60's and '70's. While some of his comments, had they been supported by data, might have been relevant criticisms had they been made 15 or 20 years ago, they are quite irrelevant now. The current data of greatest importance to evolutionary theory involve knowledge of total structure, both of important biological molecules and of the genes for these molecules. These data, now available for a huge number of molecules, allow exact comparisons across and among species. One can study not only the structure but also the functions of a large fraction of the most important particular molecules in biology—enzymes, hormones, and receptors, for examples.

Work by contemporary biochemists such as Shosaku Numa in Kyoto allow direct experimental testing of evolutionary change. Dr. Numa and others have duplicated in the lab the kinds of mutations that occur in life over greater periods of time. Lab-

Dimitrij Kuznetsov: Glasnost Creationism

A toxicologist from the Soviet Union, Dimitrij Kuznetsov, has recently been touring the US, speaking out against soviet evolutionism and in favor of creationism. He submitted a statement to Texas textbook authorities opposing evolution. Dr. K has become a roving ambassador for creationism because of his Russian Connection. Before his conversion, he was awarded the Lenin Komsomol Prize in 1983 (awarded to two young scientists each year). His claims have been observed directly and reviewed by biochemist Gaynor Wild, Associate Professor, University of New Mexico School of Medicine.

News

generated mutations as tests of evolutionary predictions have produced the same conclusions as those previously inferred from the study of naturally-occurring changes in molecular structure which Kuznetsov questions.

He also emphasized two "facts" he seemed to believe added strength to his anti-evolutionary argument: most mutations are lethal, and only a tiny fraction of the total genome ("less than 3%") is actually expressed in any organism. He said that there are "over 45,000" known kinds of mutations, and that fewer than 2% are "non-dangerous." The logical relevance of these claims to refuting evolution was not made clear, since many evolutionists agree (although they might dispute specific percentages and mutation counts). These are "fine-tuning" issues in evolutionary science.

Kuznetsov's claims about being the first person to use reverse transcriptase, in 1985, and that no one tried to isolate an expressed gene until 1987, are outrageous and warrant no specific comment. Anyone making such claims will be immediately dismissed by a qualified biochemist.

Most telling were his statements demonstrating that he does not accept science and the scientific method itself. Dr. Kuznetsov stated that he "carries out experiments for the purpose of supporting creationism." He said he interprets experiments by "faith."

He claimed this was justified because evolutionists also interpret data based on "faith" in evolution, but by saying such things Dr. Kuznetsov exposed the most important (but not the only) fatal flaw in his work. His views are by definition not open to testing or refutation. To be good scientists, we all must be open to refutation, and while in practice many of us do not want our cherished hypotheses disproven, no serious scientist can take Kuznetsov's step of openly stating that research is not to be questioned because of the requirements of "faith!" This repeats a formula familiar from statements by Institute for Creation Research and other creationist "scholars"—conclusions first, data later.

Kuznetsov may hold three doctorates, but on the evidence presented at the University of New Mexico, his work and his interpretations of the work of others would not earn my approval for a BS degree. □

Anti-Science in the Soviet Union

With the evaporation of the "Iron Curtain" and collapse of European communism, many old dogmas are crumbling in Eastern Europe. Despite setbacks in the reform process, the old days are gone and with them the limits on ideas and beliefs.

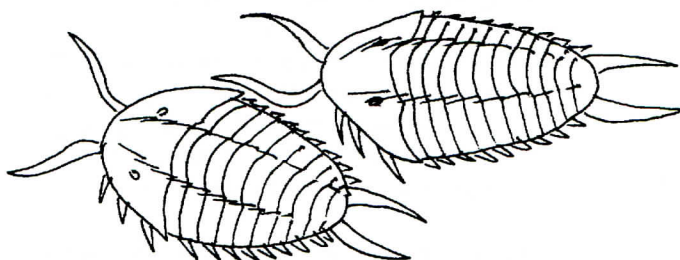
In the West, there has been rejoicing about the potential new markets for everything from hamburgers to ideas. In the East, adopting Western things has become a way visibly to reject the *ancien regime*. As a result there are Hare Krishnas chanting in Moscow, astrology columns in *Pravda*, UFO sightings galore, and an infatuation with "scientific" creationism as an intellectual movement.

An increasingly popular creationist movement is a reaction against the long-standing belief in communism which was known as "scientific socialism." In a land where only a quarter century ago genetics was officially considered unscientific, a new deluge of mysticism and anti-scientific thought bodes ill for education and the economy.

For a 1992 conference at the University of Tartu, Estonia, celebrating the 200th anniversary of the graduation of Ernst von Baer in 1792, several NCSE members have been invited to attend and discuss the issue of emergent creationism in Eastern Europe. A special symposium on the topic is being organized by Czechoslovakian biologist Dr. Lubos Belka.

At least two of us have accepted, tentatively—your editor John Cole and biologist Frank Zindler who hope to find grant support to enable them to participate. □

WE'VE NO PLACE TO GO BUT UP! YOU KNOW WHAT THEY SAY--
"THE SHORE'S THE LIMIT!"



~
Dr.
Kuznetsov
stated that
he "carries
out
experiments
for the
purpose of
supporting
creationism."
He said he
interprets
experiments
by "faith."
~

Japanese and American Understanding of Science: Is Creationism the Difference?

Do Americans lag behind the Japanese in science understanding mainly in the areas affected by creationists? That is the slightly surprising implication of a new study by Jon Miller of Northern Illinois University presented at the February Meeting of the AAAS.

A survey by Miller of general public science understanding in the US and Japan shows that many people in both countries misunderstand some basic scientific issues. Contrary to popular opinion and some other surveys, Americans are not overwhelmingly "behind" except in a couple of areas strongly influenced by American creationism: Cosmogenesis and evolution. Americans were dramatically "ahead" in some other areas, even or slightly behind in others.

People were asked to agree or disagree with a series of statements which, reduced to a single short sentence, might sometimes give pause to a professional scientist worried about technicalities. Americans "lost" heavily on questions dealing with the origin of the universe and the origin of the human species, but the former question was somewhat debatable. "The universe began with a huge explosion" was accepted by 50-60% of Japanese respondents and only half to two-thirds of that number in the US. A scientist could argue with this, as written, because it does not say that this is "the scientific consensus" rather than flat-out true. There are brilliant astrophysicists who still argue against the orthodox Big Bang for a steady-state universe, cold rather than hot origins, etc.

The statement that "Human beings developed from earlier species of animals" seems less complicated, and the national differences were much more dramatic. Only 45% of Americans agreed, while about 80% of the Japanese agreed.

As Miller notes in an interview in *Science*, the findings "don't quite compute, given the exemplary scores that the Japanese get in international testing programs." Further research is planned by the Japanese, but the 'creationist factor' is an intriguing issue.

Another, ancillary result was intriguing: Americans in their forties outperformed other age groups. This contradicts the idea that recent graduates will nor-

mally do better on a "test" like this, and it seems to suggest that the "Sputnik generation" did indeed receive a better science education than its predecessors and successors.

2239 Japanese and 2033 American adults were surveyed. □

Biodiversity

Living species are disappearing at a dramatic rate. This is not new, but what is new is that a huge percentage of extinctions are being caused by a single fellow creature—humans. Tropical forest destruction is much in the news, and an occasional snail darter or Florida cougar catches media attention in North America. Less well-known is that even in North America, comparatively well-populated by biologists, there is no thorough inventory of living forms. As recent Pulitzer Prize winner E.O. Wilson has noted, "systematic biology" is often slighted by funding agencies; systematics seems less sexy, even if it is a basic building block of the rest of biology and ecology. A "Resolution in Support of a National Center for Biodiversity" was endorsed in February by the Council of the American Association for the Advancement of Science. After a series of "whereases," it concludes:

"Whereas, federal legislation has been introduced that would create a National Center for Biological Diversity that will draw together sources of information on biological diversity, support research to fill gaps in that information, commission and publish guides, keys, and faunal/floral and microbial surveys for public uses, and communicate information to policy-makers and conservation organizations; "Therefore, be it resolved, that the AAAS supports the concept of a national center for biological diversity as a data coordination and information center, urges that it be developed in coordination with other environmental databases, and encourages other scientists to support such initiatives that more fully incorporate biological information into the public policy process."

As a AAAS affiliate particularly interested in biology, NCSE brings this matter to readers' attention. The NCSE Board has not voted on this, we'll note, but the editors commend the idea to readers' attention. If you agree, tell your congressional reps. □

~
Only 45%
of
Americans
agreed
[that]
"Human
beings
developed
from earlier
species of
animals."
~

Christian Reformed Church Clears Van Till

After four years, Calvin College physicist Howard Van Till has been cleared of charges that his teaching runs contrary to that of the Christian Reformed Church. The church-run college's governing board of 50 voted nearly unanimously that he was not guilty of heresy at a February, 1991 meeting at the college in Grand Rapids, Michigan.

Students and faculty hailed the decision, but conservative ministers denounced it as a "whitewash."

The controversy centered around the publication of Van Till's book, *The Fourth Day*, a review of modern astronomy which included information about the "Big Bang" theory accepted by most contemporary astronomers but not some biblical literalists, as Van Till learned. The Trustees encouraged him to continue his research and reflections but to be "circumspect" in his teachings about the Bible.

A minority of the committee, however, stated that the church should explicitly reject scientific claims that humans evolved from lower forms of life. A Church Synod meeting in June will consider this and other aspects of the case, which raises questions about what can and cannot be taught in church-supported colleges. The *Grand Rapids Press* quotes a board member as saying, "We've always been broader in our beliefs than those attacking the board (and Van Till) seem to think."

Chicago Cubs Defamed! Or ESP?

Cold fusion remains in the air, if not in the lab. Two new attempts to replicate the alleged phenomenon are reported in an April 26th *Washington Post* syndicate article. Robert Park, director of the Washington office of the American Physical Society, described the new theories as "wacky."

So far, so good. Scientists differ, etc., etc. Park is further quoted as saying of one of the research teams, "There is no reason to doubt the sincerity of the two scientists involved, who are respected and well known as science managers. But there are also sincere scientists who believe in psychokinesis, flying saucers, creationism, and the Chicago Cubs."

Creationists claim truth as well as God is on their side—and no Cubs fan has ever made the first of these assumptions, at least. □

Archaeologists Form Education Committee

The Society for American Archaeology, the principal national professional organization of archaeologists, has established a "Formal Education Subcommittee" of its "Public Education Committee." At a recent meeting they voted to focus on preparing curriculum guidelines to introduce archaeology in K-12 schools via teacher manuals.

NCSE members' suggestions of topics, issues, problems, etc. (and suggestions for ways NCSE might cooperate with the SAA) are solicited by the Subcommittee. The contact person is Paul Hooze, Licking County Archaeological and Landmarks Society ("LCALS"), P.O. Box 271, Granville, OH 43203. Wisconsin CC Liaison Alice B. Kehoe, professor of anthropology at Marquette University, is a member of the SAA Committee and Subcommittee. □

Texas A&M: Have Aggies Evolved?

A correspondent reports that he is surprised by the irony of his daughter's private, parochial school advertising its commitment to teaching evolution while at the nearby public university where he teaches, this commitment seems less clear.

"Texas A&M has a large science education component in its School of Education, but many of the students who specialize in science education 'don't believe in evolution.' A typical response [when I enquire] is 'I'll teach it if I have to, but I'll also teach creationism.' Clearly, they don't really understand evolution, or its central role in modern biology, agriculture, etc.

"I have students in [my A&M] classes who grew up on farms, and clearly accept the idea of selective breeding for faster-growing hogs (for example), yet claim this is not evolution 'because evolution means, like, changing from a fish into a frog.'"

These comments would not pass muster at the neighboring parochial school.

~
"The loss of species and genetic diversity . . . is the folly of our descendants are least likely to forgive us."

Edward O. Wilson

t a p e s

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New Resource Center Section!

NCSE now offers computer diskettes on topics of interest to our members. Cost, including postage, is \$5/diskette. Our first three offerings are listed under "Diskettes" to the left.

The Origin of Theses: A Look at the quality of two theses from the Institute for Creation Research Graduate School

Kevin Henke

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

An Evolutionist Goes to the Creationist Movies

Frank J. Sonleitner

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

What's Wrong with Pandas?

Frank J. Sonleitner

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

New Debate Transcript!

Duane Gish v Fred Parrish

Parrish's transcript from 5/6/91 debate. Lots of humor. See tape list.

Books!

The Creationist Movement in Modern America

Raymond A. Eve and Francis S. Harrold

The authors draw on sociological theory to argue for the coherence "though not the scientific credibility" of the creationist viewpoint. The study carefully defines creationism, explores its historical background, and profiles its various factions.

The Creation Science Controversy

Barry Price

Australian Barry Price analyzes the science and politics of creationism in a hard-hitting book.

Evolution and the Myth of Creationism: A Basic Guide to the Facts in the Evolution Debate

Tim M. Berra

State of the art evolutionary theory plus reasons why the creationist arguments are scientifically invalid. A good basic reference to the controversy.

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NCSE News

Officers and Directors Hit the Roads and the Media

The last couple of months have been busy for NCSE staff and officers. Director Laurie Godfrey presented a paper at the annual University of Massachusetts Sigma Xi banquet on The Creationist Threat Since Aguilard; director Kevin Padian, a paleontologist at the University of California, was featured in a *NOVA* miniseries on dinosaurs; newsletter editor John R. Cole had a 2-hour radio interview and call-in gig in Columbus, OH.

Since January, Executive Director Eugenie C. Scott has appeared on *Geraldo*, expressing a scientific opinion on so-called, "near death experiences," and on radio shows broadcast from Leesburg, FL, and Albany, NY, the latter with Duane Gish from the Institute for Creation Research. She also lectured at the University of Louisville and the California Academy of Science. She presented workshops to California teachers in San Jose, Santa Clara, and San Mateo, as well as participating in a state-wide television broadcast of an in-service teacher education program on controversial issues for the Los Angeles Department of Education. She also gave a lecture on science and pseudoscience at Mills College, in Oakland, CA, and spoke in Lexington, KY, to the Kentucky committee of correspondence, KASES (Kentucky Association of Science Educators and Skeptics), and in Milwaukee to the Wisconsin CC.

Dr. Padian was cited in articles in *Science* (15 Feb. 1991, pp. 738) and the Los Angeles Times on the granting of graduate science degrees by the Institute for Creation Research.

Dr. Scott was also cited in a different article in *Science* magazine (24 May, 1991, p. 1061-1062) about university scientists who are attempting to improve pre-college science education. She and NCSE members Dr. Larry Lerner and Dr. Richard

Schrock were quoted in an *EPIEgram* article about the struggle to improve science textbooks (17[6], 1991.) She was also cited as an authority on the creation/evolution controversy in newspaper articles from Peoria, IL, and Leesburg, FL, and in *Education Week*. She was less favorably cited in the religious right publication, *Focus on the Family Citizen* (March 18, 1991), regarding NCSE's efforts to keep the creationist book, *Of Pandas and People*, from being adopted in Alabama.

Scott was also featured in a long interview in the *Bible-Science Newsletter*, (February, 1991) regarding a variety of opinions about creation and evolution. The interview has not surprisingly sparked a series of letters critical of Scott and evolutionists in general. □

Skehan New NCSE Supporter

Director of the Weston Observatory, theologian and Jesuit priest Dr. James W. Skehan is the latest addition to the "NCSE Supporters" list. He has written extensively on the creation-evolution controversy and is author of a well-received booklet published by the National Science Teachers Association, *Science and Religion*. We welcome Fr. Skehan to our "list" and appreciate his long-time service to NCSE.

Johnnetta Cole Named to '1000 Points' Board

NCSE Supporter Johnnetta B. Cole, president of Spelman College in Atlanta, has been named to the Board of the "Thousand Points of Light" Foundation. Taking its cue from a phrase popularized by President Bush, the foundation seeks out and honors individuals who are active in and crucial to volunteer programs around the US.

Dr. Cole, one of America's foremost educators, is an anthropologist by training who taught at the University of Massachusetts at Amherst and Hunter College before assuming the presidency of Spelman. A selective, predominantly African-American women's college, Spelman has received considerable publicity in recent years via thinly-veiled references on NBC-TV's Bill Cosby Show (a "Huxtable" daughter has enrolled), but academically it was already recognized as one of the better-known "ivy-covered" colleges in the country—a reputation Dr. Cole has enhanced.

As we go to press, NCSE is moving to a new office in Berkeley, CA. However, the post office box address and the telephone number remain the same:

PO Box 9477
Berkeley, CA 94709-0477
(415) 843-3393

Recognition and Thanks

Many people contributed to NCSE in 1990, and we appreciate all of your help. The following members contributed \$100 or more, and we sincerely thank them for their special support. At a time when there are so many competing worthy causes, we are honored that NCSE earned their level of generosity.

Nelson W. Barnhouse
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Jon J. Thaler
Stan Ulrich
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CSICOP Award to Scott

Dr. Eugenie C. Scott, NCSE Executive Director, received the "Public Education in Science Award" for 1991 at the annual meeting of the Committee for the Scientific Investigation of the Paranormal (CSICOP) in Berkeley in early May. The award reads, in part, *in recognition of her distinguished contribution to the teaching of scientific principles and to the public understanding of science. Congratulations, Genie!*

Laurie Godfrey off to Madagascar Again

Board member Laurie Godfrey is returning to Madagascar this summer to conduct paleontological fieldwork. With a team of Malagasy scholars and colleagues from Duke University and the State University of New York, she will be seeking further fossil evidence about the evolutionary history of lemurs. She is an anthropologist at the University of Massachusetts at Amherst.

Lemurs are prosimians found today only on the island of Madagascar, although they once were distributed much more widely.

In addition to research on fossil and subfossil lemurs, evolutionary theory and the American anti-evolution movement, Dr. Godfrey is especially concerned with Third World science education and its appalling obstacles. "Students face some of the same problems everywhere," she says. "Learning the subject matter, learning how to do science—these are universal. But in many countries there are literally no current books or journals, no photocopiers, not even a supply of paper on which to type a dissertation! The most brilliant student can hardly leave her mark if there is no paper available, and that is the kind of dilemma too many Third World countries face." □



Get busy you Goldbricks! We've still got all this stuff to bury!!

Resources

This section briefly notes publications of interest without necessarily endorsing or criticizing them. Where indicated, copies are available from the NCSE Resource Center, P.O. Box 9477, Berkeley, CA 94709 for nominal charges.

Alexander, R. McNeill. 1991. "How Dinosaurs Ran." *Scientific American* April, pp. 130-136. A zoologist analyzes dinosaur tracks and skeletal anatomy and thinks he could outrun a Tyrannosaurus.

Dance of the Planets. A.R.C. Science Simulation Software, PO Box 1974N, Loveland, CO 80539. 1-800-759-1642. \$195. A simulation of the solar system for IBMs praised in *Sky and Telescope* and *Scientific American*, designed for problem-solving and investigation of original problems as well as nifty graphics.

Eve, Raymond A. 1991. "What's Wrong with Science Education? Look at the Family." *Skeptical Inquirer* 15(3): 296-299. Argues that the family is the basic factor in education, and society is not supporting it or alternatives such as high quality day care.

Gibbons, Ann. 1991. "Systematics Goes Molecular." *Science* 251: 872-874. 22 February. News report on how high-tech labs are healing a rift between molecular biologists and old-line systematics. (Avail. from NCSE for SASE + \$.50)

Gillis, A.M. 1991. Can Organisms Direct Their Evolution? *Bioscience* 41(4): 202-205. A review of recent research challenging the randomness of bacterial mutations.

Gleick, James. 1987. *Chaos: Making A New Science*. New York: Viking. Newly available in paperback from Penguin. A clearly written modern instant classic which shows that "chaos" is a science, not just "Murphy's Law" made fancy.

Graber, Robert, and L.M. McWhorter. 1989. Creationist Resistance to Evolution: The Patriarchal Unconscious as the Key. L.B. Boyer and S.A. Grolnick, eds., *Essays in Honor of Paul Parin*. In *Psychoanalytic Study of Society* 14: 167-190. We haven't seen this one.

Hacking, Ian. 1991. *The Taming of Chance*. New York: Cambridge University Press. \$44.50 hardcover, \$14.95 paperback. Hacking explores the impact on society of the idea of statistical chance

from the Renaissance to the late 19th century. Science and religion were profoundly affected by the shift from divine to statistical "destiny."

Hoffman, Michelle. 1991. An RNA First: It's Part of the Gene-Copying Machinery. *Science* 252:506-507. Silkworm genetics seem to show that RNA, not just DNA, is involved in replication. This news article notes that this is strange enough that no one yet knows what it may mean. An intro to the technical article by Lisa Young, et al., below.

Jarmul, Robert (Editor). 1991. *Headline News, Science Views*. Washington: National Academy of Sciences Press. \$14.95 paperback. Seventy-five essays reprinted from the series syndicated by the NAS to 250 newspapers, plus some cartoons from those newspapers. Bill Cosby leads off with comments on public misperceptions of science.

Kabnik, K.S. and D.A. Peattie. 1991. Giardia: A Missing Link Between Prokaryotes and Eukaryotes. *American Scientist* 79(1): 34-43. This anaerobic intestinal parasite does not have mitochondria.

Mann, Charles. 1991. "Lynn Margulis: Science's Unruly Earth Mother." *Science* 252: 378-381. Excellent, brief profile of Margulis and the "Gaia Hypothesis" she champions to the consternation of most biologists who nevertheless respect her brilliance if not her rhetoric (she can toss off an opinion of neo-Darwinism as a "quaint, but potentially dangerous aberration" or refer to it as "a minor 20th Century religious sect within the sprawling religious persuasion of Anglo-Saxon biology.") Margulis is, however, a leading evolutionary theorist with no patience whatsoever for creationists or anti-evolutionism. (Avail. from NCSE for SASE + \$.50)

McNamara, Kenneth J. (ed.) 1990. *Evolutionary Trends*. Tucson: University of Arizona Press. \$45 hardcover, \$24.95 paperback. Technical papers explore whether there are trends, (not the cliché of "progress") and what they may be.

Science and Religion News is a brochure-like (ie, a folded single 11 x 17 sheet) quarterly newsletter from the Institute on Religion in an Age of Science, Inc. It has brief news notes, publication notes (it recently spoke well of NCSE), a meetings calendar, etc. \$8.00 US, \$9.60 Canada and Mexico, \$10.60 elsewhere from IRAS, 65 Hoit Road, Concord, NH 03301. (Note: they're *not* fundamentalist-oriented)

Standard Geological Column:

Exxon

Esso

Standard Oil

(disconformity)

Pennsylvanian

Resources

Priebe, Fred, et al. 1991. Standard Model of Fundamental Particles and Interactions. Color wallchart produced by Contemporary Physics Education Project, Mail Stop 50-308, Lawrence Berkeley Laboratory, Berkeley, CA 94720. Free. Designed to change high school physics by bringing it out of the Mendeleyev era into that of flavored quarks.

Rigden, John S., and Sheila Tobias. 1991. "Too Often, College-Level Science Is Dull as Well as Difficult." *Chronicle of Higher Education*, March 27, page A52. The results of a study of introductory science classes using professional scholars as auditors—these professors often couldn't understand the point of classes.

Ross, P.E. 1991. Science? Nyet. *Scientific American* 264(6): 17-20. Pseudoscience, occultism and creationism on the rise in the USSR. (Avail. from NCSE for SASE + \$.50)

Shubin, N.H., A. W. Crompton, et al. 1991. "New Fossil Evidence on the Sister-Group of Mammals and Early Mesozoic Faunal Distributions." *Science* 251:1063-1065. 1 March 1991. Technical report on advanced mammal-like reptile fossils from Canada (not ancestral to mammals).

Toumey, Christopher P. 1990. Social Profiles of Anti-Evolutionism in North Carolina. *J. Elisha Mitchell Scientific Society* 106(4): 93-117. Characteristics of creationists in NC in 80s based on a state-wide poll (53% are young-earthers, for example). Avail. from NCSE for \$2.75)

Trefil, J. 1991. Whale Feet. *Discover* 12(5): 52-59 (March). Report on Eocene whale fossil with small but functional hind limbs. (Avail. from NCSE for SASE + \$1.00)

van Vark, G.N. 1990. Affinity, Hominid Evolution and Creationism: New Computer Methods Weaken Creationists' Position. *Human Evolution* 5(5): 471-484. Fairly technical multivariate statistical analysis of fossil and living hominoid skulls "tests" creationist vs. evolutionist models. (Avail. from NCSE for \$2.00)

Young, Lisa M., Heather M. Dunstan, Pamela R. White, T.P. Smith, S. Ottonello, and K. U. Sprague. 1991. A Class III Transcription Factor Composed of RNA. *Science* 252: 542-546. (See Hoffman, above) □

Review of *Before Adam*, by Jack London.

John R. Cole

Before Adam was serialized in 1906 and published as a slender book the next year. When it was first published, some critics complained that it was too pedantically devoted to popularizing state-of-the-art science. Anthropologist Loren Eiseley called this book one of the major influences on him as a young man. Today, of course, its picture of human evolution is outdated, but it remains an interesting book for several reasons beyond its literary merits.

The effort to capitalize upon popular interest in evolution at the turn of the century is interesting in itself. One might equate this with the idea of Norman Rockwell concentrating on a series of human evolution paintings because he knows it will sell like hotcakes and enhance his reputation in the 1940s or 1950s.

Written when little was actually known about human evolution, *Before Adam* relies upon the 19th Century assumption that human prehistory was closely echoed by existing primate species—that the earliest proto-humans were tree dwelling apes, for example. "Survival of the fittest" is treated by London as an issue of direct competition and brute force. In this he follows his contemporaneous "Social Darwinists." Unlike Spencer and others, London was a socialist, and his sympathies clearly lie with the under dogs, but he depicts their extinction as inevitable.

The premise is much like that of *The Clan of the Cave Bear* and its sequels except that London relies upon a contemporary belief in the principle of atavism—the idea that "throwbacks" to earlier times lurk just below our civilized veneer. His protagonist, in fact, is a modern youth who "remembers" his earlier life as a proto-human in dreams and nightmares. The book is thus an interesting snapshot of how people looked at human evolution at the turn of the century as well as a good Jack London yarn.

Many editions, including Bantam Books 1970 paperback; originally published by Macmillan in 1907.

~
How was evolution viewed at the turn of the century in popular literature?
~

Tracking Those

The Origin of Turtles: One Fewer Problem for Creationists?

Kevin Padian
Department of Paleontology
University of California at Berkeley

~
The job of
paleontology
is not to
find the
ideal
ancestral
intermediates
but to
establish
the
characteristics
that would
link major
groups in
common
ancestry
and to find
other forms
that share at
least some
of those
derived
characters.
~

Transitions between major groups of organisms—so often misnamed “macroevolution” by “scientific” creationists—are difficult to establish in the fossil record. But this should hardly be surprising. What are the chances of finding “the” ideal intermediate between differently adapted groups that have been separated for eons? Of course, creationists depend upon this improbability to deny that evolution has taken place. But the job of paleontology is not to find the ideal ancestral intermediates but to establish the *characteristics* that would link major groups in common ancestry and to find other forms that share at least some of those derived characters.

Bird origins among theropod dinosaurs is well-established (Padian and Gauthier 1985; and see Padian, *NCSE Reports* 11[1]), and there is progress on a new front: turtles. Our shelled scaly friends have presented a paradox for a century and a half. Their first representatives turn up in Late Triassic German deposits as *Proganichelys* and *Proterochersis* (Carroll 1987). They are fully shelled but still have palatal teeth, like many archaic reptiles and unlike modern turtles. Turtle fossils are well-known from the Jurassic, Cretaceous and Tertiary times.

But where did they come from? (They may tell their young that the *Archaeopteryx* brought them, but paleontologists know better.)

One problem is that turtles are the only living reptiles lacking two openings in the side of the skull behind the head; they have none at all. This is a primitive characteristic in comparison to the two-holed (diapsid) condition found in lizards, snakes, crocodiles and birds (as well as all the diapsid dinosaurs and pterosaurs). Turtles first show up in Late Triassic deposits, but the other non-diapsid reptiles, a weird and archaic lot, all had their heydays earlier in the Pennsylvanian and Permian and had kicked the bucket long before the Late Triassic rolled around—all but one, that is, and this is where things get interesting.

For some years, ever since the first cladistic analyses of fossil tetrapods (four-leggers), it seemed that one of the Captorhinidae, an obscure Paleozoic reptile group, was the closest to turtles (Gaffney and Meylan 1989). Fairly nondescript, besides lacking the two-holed condition they shared four interesting characteristics with turtles: a medial process of the jugal bone, loss of two other bones, and presence of an orbital-nasal foramen.

It is easy to see that you are impressed with this dramatic list; most paleontologists certainly have been (yawn . . .). Many groups have lost the same ectopterygoid and tabular bones, and the other two characters do not exactly inspire unshakable confidence in a given phylogeny. Fair enough. Not much, but all we had. The big problem, on one level, was to explain why there was such a gap between the Late Permian when these critters bit the dust and the Late Triassic, when the first turtles show up. Hiding somewhere learning how to grow a shell does not seem too likely a scenario.

But now we have a better solution. Two Canadian paleontologists, Robert Reisz and Michel Laurin, have determined that the closest relatives of turtles belong to a different group—the procolophonids, nondescript small reptiles that roamed South Africa in the Permian and spread into the USSR and North America, among other places, during the Triassic (Reisz and Laurin 1991).

Is this just trading one nondescript reptilian sister-group for another? Could be, but on the face of it the new argument and evidence seem to provide a better answer to the turtle question in several ways.

For one thing, there are *ten* characters instead of four uniting the two groups, at least in the South African *Owenetta*. These characters include ten skull features that are fairly odd (which makes them fascinating to systematists but too obscure to discuss here). The other nice part of this new argument is that procolophonids are found throughout the Triassic, when turtles first

Incredible Creationists

evolved, so the stratigraphic and time gap between the groups is shorter.

However, finding the “ancestral grail” in this bunch is difficult. Triassic procolophonids tend to have weird skulls with spiky protuberances that remind you of your high school prom date.

The moral of this story is, of course, that slow and steady wins the race. Science is indeed self-correcting, and as evidence accumulates, we often get better explanations of the available evidence.

Is the captorhinid hypothesis of turtle ancestry dead? Not really, according to its originator, Dr. Gene Gaffney. The new hypothesis has some attractions, but one always has to go back to analyze the characters chosen to establish a phylogeny. Besides, the procolophonids (whatever they are) are in a taxonomic mess that has needed a housecleaning since the 1920s.

Further testing of both hypotheses, and some cooperative brainstorming by the scientists involved, ought to forge a stronger answer. But for the moment, the new research is exciting and stimulating to further work.

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Reisz, R.R., and M. Laurin. 1991. *Owenetta* and the Origin of Turtles. *Nature* 349: 324–326. □

Correction: Michael Denton's Views Have Not Evolved After All

Jim Lippard, Dept. of Philosophy
University of Arizona, Tucson, AZ

In the July/August 1988 issue of *NCSE Reports* (p.17) the Australian Skeptics' publication *The Skeptic* (Winter 1988) was cited, quoting Duane Gish as saying that Michael Denton now believes that “evolution was possibly now a provable reality given recent advances in technology.” Since Denton is one of the most widely cited creationists, especially on molecular biology and genetics, this would represent a rather dramatic turn around, if true.

I have reviewed a videotape of the debate in question between Gish and Australian Ian Plimer, and here is what Gish actually said: “Dr. Denton did not wish to deny or go back on anything he put in his book [*Evolution: A Theory in Crisis*]. [Rather, he said] that if he were going to write a book on this subject he'd take a different approach . . . from the perspective now in genetic research he believes that possibly its possible to objectively establish that [sic] if evolution is possible or not. And certainly from his present state of knowledge he believes it can be objectively proven that [evolution] is impossible.”

Still No Equal Time in West Virginia

Karl Fezer reports from West Virginia that the “equal time” bill filed this year has not passed the legislature. He adds that, contrary to the editorial note in the last issue, to his knowledge no other state has introduced this bill, although it has been introduced several times in the past five years in essentially the same form in West Virginia.



Dilemmas in Amoebo Dating

Well, my place—or my place?

Primitive Medicine



I think it's something bacterial—

Keeping Tabs

Creationism In New Zealand

M. Carol Scott

Auckland University, New Zealand

~
Only those
few
students
who select
biology and
pass
through the
seventh
form are
guaranteed
any
teaching of
evolution.
~

As part of a 1987 anthropology Masters Thesis I researched the role played by creationism in New Zealand society without engaging in specific arguments; my goal was simply to investigate whether its international resurgence was having an impact here.

New Zealand shows little evidence of an organized creationist movement, although we have our own history of nineteenth-century reactions to Darwinian theory, recent growth of conservative Christian groups, and our own Creation Literature Society established as a result of links with the USA. But what we do have is a very low profile for evolution teaching in our schools.

Syllabus changes mean that only those few students who select biology and pass through the seventh form are guaranteed any teaching of evolution. Most school leavers therefore have little if any knowledge of the most unifying theory in biology.

I interviewed state secondary school science teachers and was surprised to find a range of responses from the expected adamant rejection of creation theory as a science class topic to enthusiastic support for it. Many seemed to opt for a supposed middle view in an attempt to be "fair." A few specific comments:

School 1:

Teacher A: *"I am sympathetic to the Day-Age*

theories of creationism, but hardline creationists have gone a bit too far. But both theories [evolution and creationism] have some validity."

Teacher B: *"The place for talking about creationism is when we discuss the shortcomings of evolution, then we try to juxtapose the two theories together. I certainly don't like the idea of just presenting one point of view."*

School 2:

Teacher: *"I don't want to tread on other people's beliefs.*

"I teach that a theory is basically a suggestion or an idea and wouldn't teach it as based on any framework of facts. Evolution is said to be a theory but what happens is that it gets taught as a fact. Creation and evolution are both theories—you don't say they're absolutely right or absolutely wrong."

School 6:

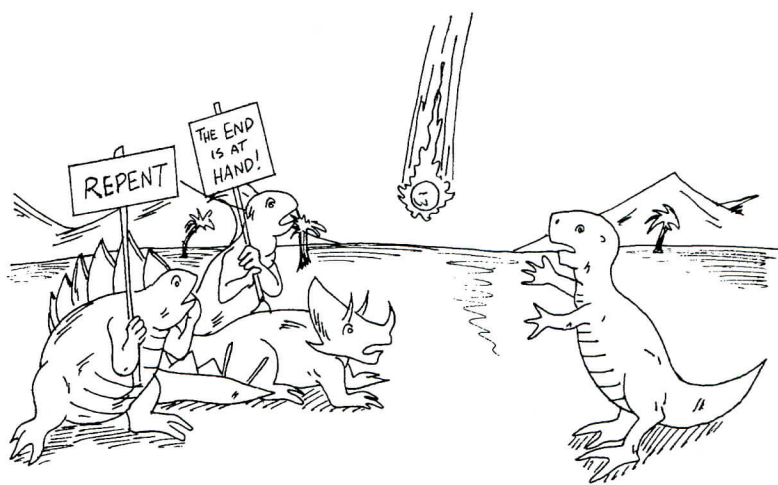
Teacher: *"If you're teaching creation properly, the only time you need to mention God is at the beginning. You then work on fossil evidence, etc. I teach basically according to the syllabus because we're very exam-conscious. I don't want to see evolution chopped out. You've got to have opposition theories otherwise scientists get slack and slap-happy."*

School 9:

Teacher: *"Twenty-five years ago nobody in New Zealand would have mentioned creationism. In the universities it was a naughty word. In the universities the attitude was, evolution is the gospel and if you want to pass you'd better shut up! I think that was the climate in those days—people not given the chance to air their views as much as today. Today, we have all parts of the spectrum represented in the staff here, from theistic evolutionists onwards. We have a creationist textbook in the library."*

School 12:

Teacher: *"I feel a bit like a pendulum sometimes. Ten years ago I probably would have just accepted evolution. Today, my approach to teaching evolution is that although I wouldn't say I accept creationism as the be-all and end-all, I don't accept evolution as the only explanation, either."*



Calm Down—It's only a meteor!! -

Keeping Tabs

By genuinely attempting to be “fair,” teachers have frequently fallen for one of the creationists’ most successful ploys. There are persuasive images of fair play and democracy-in-action in the creationists’ appeal, and many teachers seem to listen to that theme. We do not expect flat earth theory or astrology from science classes, though, and creationist stories are similarly out of place.

Creationism has become well-established in Australia, with the majority of its activities generated from an organizational base in Queensland. New South Wales also has a significant movement, and a memo from the Director-General of Education in 1986 asked school principals not to include creationism in that state’s science curriculum as an alternative to evolutionary theory.

My hope is that New Zealand science teachers will take heed of the Australian situation and protect themselves from the dilemma of what is “fair” by ensuring that they understand exactly what so-called

“scientific creationism” is and its place as *religion* within the range of people’s beliefs.

In 1988 a spokesman for the New Zealand Education Department said on a national broadcast of *Insight* that he saw no problem with teachers’ presenting “scientific creationism” “. . . as long as they’re presenting it as one possible explanation and not as the only explanation.” This contrasts with the fair dinkum comments of the Australian NSW Minister of Education:

“There will be no more hocus pocus taught under the guise of science in our state schools. It is unacceptable to teach sun spots as an explanation of the French Revolution and it will be unacceptable to teach creationism as an explanation for biology.”

(Condensed, with the author’s permission, from “Creationism and New Zealand Schools,” *New Zealand Science Teacher* 63: 14–17, Autumn 1990.)

~
“There will be no more hocus pocus taught under the guise of science in our state schools.”
~

Creationism in Australia—Down Under but not Out?

Colin Groves
Australian National University

Creationist here, in the form mainly of the Creation Science Foundation, Brisbane, and their splinter group the Creation Research Centre, have begun rearing their heads again recently after being put thoroughly on the run by a series of events over the past few years. I had noticed that their meetings in Canberra, which I try to attend if they are not (1) in a church or (2) fee-demanding, have been less and less well-attended since the first I went to in 1984. In addition, they have lost political clout, thus:

- In Queensland the Minister for Education, a creationist, had issued a directive that if evolution were taught in schools (ie, high schools), there should be “equal time” given to scientific creationism. To my knowledge, many science teachers simply ignored this directive, but of course schools with creationists on staff in other sections would doubtless have seen to it that it was observed. A bit over a year ago, the extraordinarily corrupt Queensland government fell, and the new Minister has lost no time in rescinding this directive.
- In New South Wales the former Opposition Shadow Minister for Education was a

creationist, and there was fear that when they achieved power he would become the actual Minister. But his party leader assured a noted Australian Museum (Sydney) paleontologist, Dr. Alex Ritchie, in a letter, that he would be switched; and when, two years ago, the Opposition *did* achieve power, he *was* switched, and all is well, though the creationists have prayed for the new Premier. The former Shadow Minister for Education is now, ironically, Minister for Minerals and Energy.

But of late both CSF and CRC have begun being active again. Some retired academics in the South Coast region had me invited down there to give a public lecture shortly after a prominent CSF geologist (!) had lectured there, so a bit of misinformation was nipped in the bud; but at the beginning of the new 1991 academic last week (February) the CRC were in evidence on the Australian National University campus, and Skeptics were not organised in time. I was away in Sydney so did not even attend any meetings to barrack. Meanwhile, however, Alex Ritchie has scored a signal victory over CSF, with a little help from his friends, on which he will report later, I trust. □

Pandering to Fears of Texas Textbooks

Ronnie Hastings
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The Foundation for Thought and Ethics (FTE), a Texas organization with evangelical roots, is still promoting its book *Of Pandas and People*, despite some stinging reviews (see *Reports* 10(1):16–18). It promotes “intelligent design” as an important part of the scientific study of biology and life origins. Mailings to supporters and advertisements in magazines for teachers have recently attempted to portray the recent adoption in Texas of an improved list of biology textbooks as a “problem,” arguing that *Pandas* should be acquired by schools as a supplementary text to make up for the deficient new book list.

FTE accused the State Board of Education of voting in 1990 for texts with “more than a dozen assertions . . . erroneous in mainstream medical and biological sciences.” Furthermore, the texts were criticized for including “irrelevant . . . outdated and false” origin of life experiments.

Having served on the textbook committee advising the State Board on the selection of these biology books, I observed the entire process of book selection and am frankly amazed at FTE’s misrepresentations. The Texas adoption process allows and even requires an incredible degree of leeway in asking or even requiring publishers to make actual changes in textbooks proposed for adoption. We were not somehow forced to overlook flaws, major or minor.

The alleged errors were not errors at all, but rather, changes of terminology in books suggested by a minority of our committee who wanted to include “intelligent design,” if not outright creationism, in the science books. The suggested changes were things such as dropping the term “gill slits” when discussing human fetuses and no longer calling the human appendix “vestigial.” After a couple of days of independent checking with experts by the Board, the Texas Education Agency, and our textbook committee, these changes were deemed to be not a significant enough part of the scientific consensus to warrant inclusion. Nor was it determined from expert testimony that origin of life experiments based on “intelligent design” were part of the scientific consensus and thus required additions to the books. In contrast, concepts such as punctuated equilibrium and the African origins of us humans were considered widely enough accepted as legitimate science to be included in the textbooks, so *unanimity* of scientific opinion was not the criterion applied.

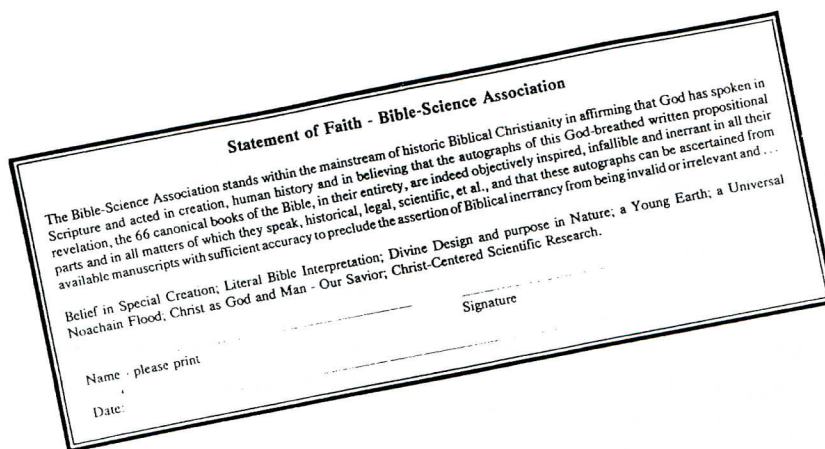
Thus, the books selected by the State Board of Education were not misleading or purposely erroneous at all, as FTE alleges. On the contrary, The Foundation for Thought and Ethics seems to be misleading its supporters and potential customers by claiming the actually very cautious Board acted in this cavalier fashion. *Pandas* is a book fraught with scientific problems and is widely recognized as such. □

To . . . learn a mystic formula for answering questions is very bad. ‘Gravity makes it fall;’ ‘the soles of shoes wear out because of friction.’ . . . To simply say it is because of friction is sad, because it’s not science.

Richard P. Feynman
“What is Science?” 1969.
The Physics Teacher 7: 313–320 (p. 317)

Nonfiction provides answers and novels illumine questions.

Norman Mailer, 1948



The B-SA Statement of Faith

The oddity of this membership requirement has often been remarked upon by critics of creationism, comparing it with the openness required of science. Of course, the latter is partly folklore, since there is no "oath of openness" or universal secret hand shake required of all scientists.

However, when Western science was first taking its modern form, it was being organized by a few national royal societies or "science clubs." The Royal Society of London, the oldest and most honored such English organization, adopted as its motto in the 1600s a paraphrase of a line from Horace's *Epistulae*:

"I am not bound to swear allegiance to the word of any master,
Where the storm carries me, I put into port and make myself at home."

The contrast with the B-SA and other "scientific" creationist organizations with membership pledges is direct and striking. They seem to have been out of the mainstream of science for four centuries, not just since Darwin.

Bible-Science Association Fundraising

A March fundraising letter from the Bible-Science Association includes some interesting figures. Since the first week of September, donations rose from an average of \$4,279.11 per week to \$11,945.16 per week by 4 January 1991. September figures were \$15-\$20,000+ per week. Contributions dropped off and then rose to \$7,323.77 for the week of March 1st.

BSA claims its back is "against the wall" and wants more money, of course. (We might suggest a simple dose of financial planning, but never mind.) We raise the matter simply as an interesting glimpse of creationist fundraising. Information usually is not available to outsiders. The figures give some idea, at least, about how much money the second-largest creation-science organization takes in directly. (The ICR mailing list is, presumably, much larger.)

NCSE does not pester members with constant solicitations, which may be a fundraising error, but it is, we hope, appreciated by our readers. However, we have to note that despite its complaints, BSA often seems to raise more money in a single week than NCSE does in one of its biannual appeals for funds! We approach such things differently as educators rather than missionaries, but perhaps the comparison is instructive: they take in a lot more money than we do, yet we have a bigger job to do.

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