# National Center for Science Education



# REPORTS

Volume 16, No. 1

SPRING 1996

# INSIDE

#### **FEATURES**

3 The Darwin Legend

4 Charitable Tax Planning

5 Uses of NCSE's Resources

#### **DEPARTMENTS**

2 Editor's Desk

6 Keeping Tabs

> 9 Office Biz

10 NCSE News

12 Resources

> 17 News

22 Letters

# Finding Evolution-Related Resources on the Internet

Leslie K. W. Chan

lectronic resources relevant to evolution are appearing on the Internet with increasing frequency. These resources range from high quality biodiversity databases, gene banks, on-line museum exhibits, electronic journals, and scholarly forums, to unregulated Usenet newsgroups, public interest groups and selfpublishers. The proliferation of navigational tools or browser programs and powerful search engines for the Web has greatly increased the ease with which information on the Internet can be discovered and retrieved. But the ease with which one can provide or "publish" information on the Web has also meant that the problems of information overload and disproportionate noise-to-signal ratio have also vastly increased. There is also a growing, though troubling perception that just about anything scientifically worthwhile is on the Internet and all manners of research questions can be answered with a simple keyword search in this vast unorganized information universe. This column highlights some of the benefits as well as problems associated with searching for evolution-related information on the Internet, and points to specific resources that provide an insight into the future trends of the Web.

Any serious research effort on the net requires checking multiple search utilities. For a comprehensive catalogue of WWW search tools and directories, as well as a handy summary chart of their different features, see "Understanding WWW search tools," by Jian Liu, Reference Department, IUB Libraries (http://www.indiana.edu/~librcsd/search/). For an analytical assessment of the various search tools see "World Wide Web searching

tools—an evaluation," by Ian R. Winship, Information Service Department, University of Northumbria at Newcastle, UK (http://www.bubl.bath.ac.uk/BUBL/IWinship.html).

A major caveat with automated search tools is that, although powerful and speedy, the results are generated by robots rather than intelligent humans. When the Alta Vista (http://altavista.digital.com) database was queried for the term "natural selection" on February 1, 1996, the engine returned "300,000" matches and displayed the ten "best" match results first. The first item bore the promising title "Natural Selection at Work," but it turned out to be a parody

FINDING continued on p. 11

Leslie has prepared an extensive primer for starting out on the World Wide Web. We will have the complete text available on our own WWW site. This cover article contains excerpts that explore and evaluate specific sites on the web that address evolution.

# · EDITORS' DESK ·

Andrew J. Petto
EDITOR
Laura L. McMahon
ASSISTANT EDITOR
Post Office Box 8880
Madison, WI 53708–8880
PHONE: (608) 259-2926
FAX: (608) 258-2415
ajp3265@madison.tec.wi.us

Eugenie C. Scott

CONTRIBUTING EDITORS:
 John R. Cole
 Betty McCollister
 Karl Fezer
Robert J. Schadewald
 Jack Friedman
J. Richard Wakefield
 (Canada)
Frank Sonleitner

CONSULTING EDITORS: Laurie R. Godfrey Kevin Padian

Deborah Ross PRODUCTION EDITOR

Articles, photographs, and illustrations may not be reprinted in whole or in part without permission from the National Center for Science Education, Inc.

Copyright © NCSE, Inc. 1996 ISSN: 1064-2358 ome things just seem to go on and on. Our readers (and many others interested in science and science education) have deluged NBC and their local affiliates with letters, calls and faxes, and sent us copies. Still, after this flood of protests, NBC chose to rebroadcast its infamous program, *Mysterious Origins of Man*, in early June. Accordingly, we are providing our readers with more information about the program and how to reach NBC and its sponsors. Please continue to share your correspondence with us, especially the replies from the broadcasters.

In New Hampshire this spring, we saw a newer strategy for attacking science education. Molleen Matsumura tells us how some parents are protesting that evolution (among many other things) violates their "rights" to raise and educate their children as they see fit. The strategy seems to appeal to our indignation at having the government tell us what is best for us. Although this move failed this year in New Hampshire, it is part of a national effort that goes all the way from pressuring the neighborhood schools to a proposal for a constitutional amendment.

We are proud to present Leslie Chan's first installment on evolution on the World Wide Web. Leslie has prepared a much lengthier document that we are formatting to put on our own WWW site (http://www.natcenscied.org). His article underscores the relevance of the "tip-of-the-iceberg" metaphor for WWW resources; lots of hidden opportunities and dead-ends!

For many of you, the operations of the NCSE office and staff are mysterious. You call; they answer. When people visit the office, they often react with, "Is that all there is? Amazing!" The amount of work that gets done there is amazing, and two articles in this issue give our readers a little more insight to our operation. First, our President, Kevin

Padian, asks us all to consider how we use those resources and how they are financed. Second, our office manager, Erik Wheaton, tells us how our donations of equipment can enhance the Center's mission. In a related matter, Keith Logan and Michael Tilles discuss planned charitable giving and describe how our members can provide long-term financial benefits to NCSE.

Our executive director, Eugenie Scott has a momentous announcement for our readers. The NCSE publications will be changing in 1997! You will learn the hows and whys of this change and the history of NCSE and its publications. We anticipate that the new format will offer more pages for insightful commentary and analysis on important issues in science education and especially in teaching evolution. Of course, we will continue to provide news and features that you enjoy and rely upon. As always, we would appreciate hearing from our readers about what they would like to see in our new format. Let your editors hear from you.

Apropos of contacting us, we have made some changes in how mail is delivered to the editorial office. We have taken the mailbox *out* of the UW Anthropology Department (which has served us valiantly over the past year) and rented a PO Box in Madison's main USPS branch. This will allow the fastest possible mail communication between you and us, so from now on, please send you mail to us at PO Box 8880, MADISON WI 53708–8880. We can't print or answer all the mail we get, but we *do* read it and pay attention.

And now this teaser, Past President Jack Friedman has just completed arrangements for another NCSE-sponsored trip to the Galapagos in early 1997. He has used his influence to schedule a solar eclipse during our trip! Look for details in *Reports* 16(2).

—Anj Petto and Laura McMahon

# **New Postal Address for NCSE Publications!**

In order to improve communications for our readers who use the US Postal Service, we have opened a new post office box in Madison. To reach us by mail, please write to our new address: **Post Office Box 8880, MADISON WI 53708–8880.** 

# The Darwin Legend

# Kevin Padian UC Berkeley

re reports of his deathbed conversion true?" So asks the sub-title on the cover of this valuable little book by James Moore, the Darwin expert who recently authored with Adrian Desmond the much-acclaimed biography of the "troubled evolutionist" (Time Warner Books, 1991). The volume at hand can be seen as a small companion volume that has less to do with Charles Darwin himself than with how he has been treated since his death, at least in a small way.

It seems that in 1915 a story began to surface that Darwin renounced evolution and embraced "Christianity" on his deathbed. The source of the story was a firsthand account by a noblewoman who had visited him at Downe and witnessed his confession that his statements on evolution had been "unformed ideas" that he bitterly regretted, especially because "people made a religion of them." He allegedly urged her to come to preach on Jesus Christ to his servants and neighbors in his summer-house, so that he could hear the hymns through the window. This story has evidently been circulated in tracts and from pulpits ever since. Moore undertook to write the book largely because he could not get away from questions about it every time he was interviewed about Darwin.

The origin and evolution of the story itself would be pretty funny if it were not so pathetic that it has been circulated uncritically for so many years, despite immediate and repeated denials by all members of the Darwin family, and despite no corroborating historical evidence of any kind. The originator of the story, one Lady Hope, appears to have been something of an opportunistic religious crusader dedicated to abolishing the iniquities of drink. Born Elizabeth Cotton, she and her father, General Sir Arthur Cotton, began as religious temperance crusaders in Kent. She eventually

V

The Darwin Legend is published in the U.S. by Baker Books, PO Box 6287, Grand Rapids, MI 49516-6287 and in London by Hodder & Stoughton. Copies of The Darwin Legend are now available from NCSE. Information on prices and ordering can be found in the centerfold.

▲

married Admiral Sir James Hope, who shared her views, and thus became Lady Hope of Carriden. Through an interesting route she found herself in Downe one summer, preaching to the locals and to the summer migrant hops workers.

Here the story becomes a little murky. Lady Hope seems to have gained entry to the Darwin house on at least one occasion, but more than one is not certain. Darwin's family was houndishly protective of his privacy and frail health; most likely all that gained her admission was his unwillingness to refuse her noble status. Her accounts of their meeting-which became more elaborate and unlikely with repetition-contain many accurate particulars of the interior and surroundings of Downe House (but also some obvious inaccuracies); however, no one who has ever studied Darwin in his letters, or accounts by people who knew him well, would recognize the actions, statements, or phraseologies of Lady Hope's story. She seems to have brought it to light in 1915 for the express purpose of drawing attention to herself at a religious retreat in Massachusetts. When its repetition eventually reached notorious proportions, thanks to newspapers and magazines, the Darwin family, T.H. Huxley, and others were called upon to address its likelihood. The situation grew so ridiculous that at one point the family had to threaten her to stop misrepresenting Darwin so flagrantly.

Moore's book is excellent scholarship. He begins with Darwin's well-established views on religion and the conflict into which this placed him with his mutually devoted spouse Emma. Moore details some of the pressures and entreaties placed on Darwin to endorse various anti-religious or free-thinking causes and organizations and Darwin's responses. Darwin had indeed called Christianity a "damnable doctrine," in the context that it demanded that

DARWIN continued on p. 8

# Directing Your Tax Dollars to NCSE Charitable Tax Planning

# Keith Logan and Michael Tilles

f you could direct how and where more of your tax dollars would be used, rather than giving up control of them, would you? Most NCSE donors would answer yes to this question. That is why NCSE has teamed up with American Express Financial Advisors: to help our donors learn about the profound tax and income benefits that families and individuals can receive through charitable tax planning and planned giving.

But what do the charitable gifts you give to NCSE have to do with taxes? Everything. Because charitable gifts offer a legal alternative choice to paying one kind of tax—capital gain tax. What's

more, if charitable gifts are wisely used as part of your overall financial plan, they can also bring *you* other benefits as well, including:

- increased lifetime income
- reduction or elimination of capital gain taxes
- reduction or elimination of estate taxes
- portfolio diversification
- increased inheritance for your heirs

This is a choice that you can actually make. It's a choice, surprisingly, that few people even know they have.

To inform our donors of these benefits, American Express Financial Advisors will be assisting NCSE in the development of a planned-giving program by providing educational seminars and financial planning services to NCSE donors and members. These seminars will be held at various locations throughout the country. In addition, our planned giving team has established a national toll free number our donors can call to find out about the nearest seminar or to receive more information. That toll free number is 1–800–225–5437.

Articles to follow in NCSE Reports will explain how you can redirect capital gain tax dollars to NCSE while legally reducing some other taxes and receiving a lifetime income and other substantial benefits. You'll also learn about your forgotten wealth—your "social capital,"

CHARITABLE continued on p. 9



How to make the world a better place for others



and less taxing for yourself

The way you give to an organization can be just as important as the size of your gift. That's why American Express Financial Advisors Inc. has teamed up with charitable organizations across the country. Together, we're showing how charitable giving can provide significant tax savings to you and your heirs, and at the same time benefit your favorite nonprofit organization. For more information on how to get the most out of your donations, call American Express Financial Advisors to find out how we can help you. 1-800-225-5437



# The Uses of NCSE's Resources

## Kevin Padian President, NCSE

s the Electronic Age progresses, our membership climbs, and our services expand as needs from new corners of the community emerge. The member who needs an exact title on that old "Noah's Ark" article we did . . . the teacher who needs a quick fax of information about why the dust on the moon is not 300 feet thick . . . the school board member who needs instant clarification of recent legislation on teaching creationism . . . the reporter with a deadline in 20 minutes who needs a pithy summary of late-breaking news in science or education . . . the newfound friend who just calls to say how glad s/he is that we're there.

We value all these people; they are our constituency and our reason for being. We are creaking into the virtual reality of websites, e-mail, and bulletin boards in cyberspace, and we're getting used to being recognized in more quarters than we ever have been. Our membership has increased substantially in just the past few months. We're getting the word out!

Most of all, we appreciate the solid and continuing help from our members who donate more than the basic membership. Many send supplements in consideration of the NCSE resources that they use, and some just send an extra donation for the heck of it. I want to let you know that all of this goes directly into the general operating fund, so that we can continue to do the day-to-day

work that is the mainstay of our business.

However (and there is so often a "however"), every once in a while we have to take stock of where we are and what we're doing. Those of you with access to the World Wide Web or who arrive at the office to find not a list of phone messages and faxes, but a roster of several dozen e-mails to answer, know that the new virtual communication gives us access to a great many more people and services and information than ever before. And, as you can imagine, NCSE has seen a surge in volume, both on the internet and via the more traditional routes of phone, fax, and mail.

We are still getting our bearings on some of this, and it may be a while before we sort it all out. It would be wonderful if we had another dozen people to search files, answer queries, look up articles, fax and mail references, and help members assemble arguments to assail their colleagues on the virtual bulletin boards and talkgroups. But as our members know, all this takes a toll on our resources, and we are facing a growing need to set priorities for our services.

Let me pose the question to you, as an investor in NCSE's goals. How would you set priorities for the Center's activities, given that our office staff time and resources are limited? Score 1 to 5, with 1 the highest.

\_ (a) visiting a high school classroom to talk about evolution

- \_ (b) teaching a group of teachers about the fallacies of the "intelligent design" texts
- (c) helping to develop a state science curriculum
- (d) giving a reporter some quick background on a breaking issue
- (e) writing an article on creationism for a major publication
- (f) appearing on a syndicated talk show or interview program
- \_ (g) helping a teacher answer a challenge from the "Handy Dandy Evolution Refuter"
- (h) informing a school administrator about recent legal challenges
- \_ (i) helping a member with a reference for his internet talkgroup or letter to the editor
- \_ (j) providing legislative information for a state bill on "balanced treatment"
- (k) raising funds and writing grant proposals to fund our projects
- (1) developing the resources on our Website

In our view, all these things are important, and we try to do them all. We have, as you know, a terrific staff, and most of the people who call our office seeking help are not members and have often just heard of us as their best source (or last resort) for a crisis or a question. But we have limits on staff time and resources, so we have to set priorities. In general, we want to use our resources in ways that will make the largest tangible difference and that will be of the greatest influence in our overall goal: clarifying science

USES continued on p. 7

# KEEPING TABS.

# **Updates**

#### LAKEWOOD, OHIO

n May 5, 1996, the Cleveland Plain Dealer, Ohio's largest newspaper, reported in a front page story that some teachers weren't waiting to learn whether the state legislature would pass a law requiring them to teach evolution and creationism side by side (see related story, p. 18). In fact, two physics teachers in Lakewood, Ohio had been presenting creationism for years. According to the Plain Dealer, Mark Wisniewski, who "has been introducing creationist ideas with the approval of the administration since 1991, says he is not teaching creationism per se." But, the story continues, "One student was persuaded to believe that the speed of light is decaying. . . . Some sided with the creationist view that petroleum and coal were formed in a few thousand years. . . . [Wisniewski] has also argued in class that . . . higher life forms could not have evolved from lower ones because that would contradict physical laws of entropy." NCSE members will recognize these claims as standard "creation science." The same story reported that creationism is just one of many religious views that Wisniewski's colleague Al White expressed in

On May 9, the ACLU of Ohio sent a demand letter to the school district superintendent and president of the school board calling for immediate removal of creationism from Lakewood's classrooms. That night at their regular meeting, the school board responded by re-affirming that creationism and other religious beliefs have no place in the science curriculum. Thanks to Tom McIver and Page Stephens for keeping us informed about events in Lakewood.

#### COBB COUNTY, GEORGIA

n May 24, 1996, the Washington Times reported that after complaints by three parents, the Cobb County school board voted to ask textbook publisher Macmillan/McGraw-Hill to remove pages 72-85 from Changing Earth, a fourth-grade earth science textbook. While complaining parents cited religious objections, district employees felt that since the state curriculum does not require coverage of theories of how the earth or the universe began, omitting the chapter was acceptable.

At press time, NCSE has learned that the publisher has agreed to make the omission, but has not heard their comments on the issue. We have also learned that Cobb County had earlier instituted a policy severely restricting the teaching of evolution (see p. 19). Since NCSE wrote to the Superintendent explaining the problems with the policy, the Board of Education is reconsidering it. The ACLU of Georgia is urging concerned citizens to express their views by writing to the Superintendent of Schools, Jerry Ingram, at 260 Keetor Rd., Talking Rock GA 30175. (Members who want to write additional letters to school board members can request those addresses from NCSE.)

## **WEST VIRGINIA**

A March 17, 1996 editorial in the Charleston Sunday Gazette-Mail rejoiced in the swift demise of a bill that would have "force[d] public school biology classes to teach 'creationism.'" According to NCSE's state liaison Karl Fezer, the same bill has

been repeatedly introduced virtually unchanged since 1981.

### COLUMBIA COUNTY, PENNSYLVANIA

harles Porter was flipping through his children's science books last month when he found what he thought was a glaring omission . . . God was gone." So begins an April 29, front page story in the Press Enterprise, a newspaper serving several towns in southern Pennsylvania. Porter, a school board member, reacted by asking Superintendent Bryan Balavage, at a school board meeting, "Is creationism . . . being taught . . . ?" The question led to an hour-long debate resulting in a decision that "creationist material could be kept in the library as reference for students."

To his credit, Superintendent Balavage explained that the district is limited by Supreme Court rulings and cannot comply with requests that science education conform to the religious views of some residents. But NCSE members in the area remain concerned. When local teachers were polled, a majority expressed the belief that "both evolution and creationism are still 'theories' and that each is 'addressed in a balanced fashion." And, as one observer confided to NCSE, "the placement, in the high school library, of books about creationism [may be] a foot in the door."

As recently as 1994, a Pittsburgh area school district responded to a lawsuit by agreeing to stop teaching creationism ("Moon School District Brought Back To Earth," *NCSE Reports* 14(4), p. 9). In light of this, the Board would do well not to open the door any wider.

# KEEPING TABS

# **NBC's "Origins" Show**

#### **Dave Thomas**

e have received a number of requests for more information about NBC's Mysterious Origins program which aired again on June 8. The following note is excerpted from the March issue of the Skeptical Briefs in response to the initial airing of that show. This article is be available on our web site at http://www.csicop.org.

Quality science was nowhere to be found during the Feb. 25th, 1996 NBC broadcast entitled The Mysterious Origins of Man. This show, hosted by Charlton Heston, was filled with some of the most aggressive anti-science propaganda seen since CBS's Ancient Mysteries of the Bible was aired a few years ago. The executive producers of Origins for B.C. Video were Michael H. Gerber and Robert Watts. It was directed by Bill Cote, produced by John Cheshire, Bill Cote, and Carol Cote, and written by John Cheshire and Bill Cote.

The show did not include comments from even one token *reputable* scientist. Instead, Heston would state the conventional wisdom, and then let the *scientists* interviewed for the show present their fantastic claims unchallenged. Heston concluded the show by stating that "It's been said that man has made the climb from Stone Age to civilization more than once, and that our present time is just the latest in this cycle."

Ironically, scientists are not the only ones fuming over *Origins*. Arch-creationist Ken Ham slammed the production in the Feb. 96 *Answers in Genesis* news-

letter. In a review entitled "Hollywood's Moses Undermines Genesis," Ham attacked fellow creationist Carl Baugh's "manprints," stating that, "According to leading creationist researchers, this evidence is open to much debate and needs much more intensive research. One wonders how much of the information in the program can really be trusted!" Then Ham noted that the book Forbidden Archaeology "is dedicated to 'His Divine Grace A. C. Bhaktivedanta Swami Prabhupada.' It appears the authors are Hare Krishna adherents! . . . Everything cycling continuously over millions of years fits well with Krishna philosophy! That seems to be what this program is all about!"

Ken Ham is right to note that the teachings of Hare Krishna are not

a basis of good science. It seems quite unlikely that he will ever realize that his peculiar brand of fundamentalist Biblical inerrancy is similarly flawed. In the meantime. NBC has sunk to a new low in this latest promotion of pseudoscientific claptrap. I encourage anyone who doesn't appreciate NBC's latest assault on science to respond by calling the complaint number (212-664-2333), or by writing Bob Wright at NBC New York, 30 Rockefeller Plaza, New York, NY 10112, or by writing the NBC staffer who actually purchased the show: Todd Schwartz, 3000 W. Alameda, Burbank, CA 91523. The company that produced the show can be contacted at: B. C. Video Inc., P.O. Box 97, Shelburne, VT 05482. [Ed. Addresses of program sponsors are given on

# USES continued from p. 5

for the public and resisting the assaults of anti-science. To do this, we need your help.

When you call on us—and that's what we're here for-consider also what it costs us. Every two hours of staff time costs us the proceeds from a single annual membership. Even if we were reimbursed at cost for the time we spend, it would not provide us with additional income to make up for the staff time that could be put to other projects. Don't mistake the message: we expect to do these things as part of our organizational function, and we're always glad to hear from you. We just ask that, when you think about using our services and resources, consider how it fits our overall goals. And if you can see your way to passing along a little

extra greenery for the office operations as a means to help others like yourself, then our capacity to help will grow. And we'll be able to focus attention on developing new communications and projects that will advance our effectiveness even more.

We look forward to serving you, and we thank you for your support of us. You have a voice in this organization, so please contact us with ideas, suggestions, and new sources of help.

[Ed. Another way to increase your financial support of NCSE office operations is to encourage your colleagues, co-workers, and others to become members of NCSE.]

# KEEPING TABS .

# **Contact the NBC Sponsors**

any of our readers have had correspondence with the producers of NBC's *Mysterious Origins of Man* and with NBC executives in the aftermath of the two broadcasts. Universally, the replies from NBC have been less than satisfying. However, several of our readers have suggested that we may be more effective by contacting the sponsors of this program and, so, have sent us the following information for contacting them. The *national* sponsors of this poor program, with their contacts, are listed below, courtesy of Mason B. Meers. In your own community, it may also be effective to write to the *local* sponsors whose ads aired during the program.

## Kellogg's Cereal Home Page

www: http://www.kelloggs.com/

e-mail: none found . . . phone: 1–800–788–8003 address: Garner & Nevins

Kellogg's Clubhouse

1300 Parkwood Circle, Suite 300

Atlanta, GA 30339

Note: The address and phone number are

for their catalog division. You'll have to ask them for other phone numbers/

addresses.

## Toyota U.S.A.

www: http://www.toyota.com/

e-mail: none (they report "coming soon" phone: none found—call your local dealer

for more info

#### Toyota Corp.—Japan Headquarters

www: http://www.toyota.co.jp/

\*partially in Japanese

#### **Chrysler Corporation**

www: http://www.chryslercorp.com/ e-mail: chryslercars@chryslercars.com Note: this is actually for feedback about their

web site

phone: 1-800 -4-A-CHRYSLER

(1–800–422–4797537) General information

#### **JCPenney**

www: http://www.jcpenney.com/

phone: 1–800–542–0800 JC Penney Co Inc.

1-800-222-6161 JC Penney Catalog 1-800-692-5246 JC Penney Financial

Service-Claims

1-800-527-8345 Penney J C Bridal

#### Olive Garden Restaurants

phone: 1-800-331-2729

\*"Guest Relations Number"

#### M&M/Mars Candy

www: http://www.baking.m-ms.com/

Note: this site is for a particular product of the co. e-mail: bakerman@www.baking.m-ms.com

Note: e-mail goes with the above internet site

# **DARWIN** continued from p. 3

all unbelievers (including Darwin's father and many of his own friends) be eternally punished.

On the other hand, the funeral at Westminster Abbey and the attendant testimonies from scientists, clergy, and statesmen seems evidence enough of some sort of detente in the conflict.

Emma and the family perhaps were unwilling to stir it up again; hence the excision from the *Auto*-

biography of all anti-religious statements. Furthermore, family and friends carefully tended and protected his post-mortem image.

Darwin was an agnostic who did not like the arrogance of much of the established religion that he knew. Lady Hope's testimony was self-serving nonsense, easily shredded by historical analysis. Unfortunately, empirical evidence seldom rectifies a longstanding myth, and so Moore's book is engaging and edifying reading.

U.S. Rep Helen Chenowit (Rep, Idaho and Mars): "A species goes out of existence every 20 seconds. Surely a new species must come into existence every 20 seconds."

—The Nation, 12 Dec., 819

# Donations Needed



#### **Erik Wheaton**

Il of us at NCSE share very few pieces of major equipment. What this means to members is that it may take us a little longer to respond to your needs and requests. For example, while one person prints out a letter to a school board considering a creationist curriculum, another must wait to mail a reply to a request for information. Your donations are needed to help us improve our efficiency and pro-

ductivity. If you have any of the following items and would like to make a *tax-deductible* donation to NCSE, please contact the office manager: Erik Wheaton, NCSE, 925 Kearney St., El Cerrito, CA 94530–2810, (510) 526–1674.

#### **Equipment needed:**

**Printer:** any Hewlett Packard laser printer model III or later.

**Modems:** any PC modem 28,800 baud or better.

**Hardware:** 486 DX33 (or better) computer motherboards

Computer Software: Microsoft Access 2.0 for Windows 3.1, and ProComm 3.0 for Windows

Scanner: any Hewlett Packard scanner with SCSI connection (needs 1542A or better SCSI card)

**FAX Machine:** any plain paper fax machine.

Your donations of equipment are tax-deductible. *Please remember to call before sending any donation.* And thanks in advance for your help!

# Gallup Poll Again Shows Confusion

#### John Cole

ccording to an April 25-28 Gallup Poll (*Boston Globe 5*/29/96), 58% of the American public favors "teaching creationism in schools" and 73% favor "school prayer." There is a reported 3% margin of error in this telephone poll of 1,001 American adults.

As is common, the actual questions were not reported, so it is unclear what is actually being supported. Elsewhere (*C/E* 22, 1988) I reported on a survey which produced strong support for "equal time for creationism"—but strong *opposition* to teaching each of the basic tenets of "scientific" creationism. In other words, people supported the vague concept of "fairness," but when confronted with the actual claims (6-day Creation, young Earth, universal flood,

etc.), they tended to say "no way!"

This particular Gallup Poll had several similar anomalies. 71% of people supported "reducing all government agencies" but 54% opposed any cut in defense; 53% opposed any cuts in "social spending."

Unfortunately, these poll results suggest that NCSE members should not let down their guard. There is a lot of real support for creationism-education, and there is even more "soft" support which can be exploited by zealous antievolutionists. Widespread ignorance of both the scientific and legal or educational issues is alive and well.

# CHARITABLE continued from p. 4

and how you can reclaim and reinvest it in organizations that you choose.

American Express Financial Advisors, Inc. is a leading financial planning company and currently owns and/or manages more than \$113 billion in assets. Through a network of more than 8,000 financial advisors, the company provides ongoing, long-term fi-

nancial planning coupled with a selection of more than 200 financial products to nearly two million clients nationwide.

For dates, times and locations of Charitable Tax Planning Seminars nearest you, or to receive more information, please call our new planned giving/estate planning hotline at 1–800–225–5437.

# . NCSE NEWS .

# NCSE Board Announces New Publication Format

# Eugenie C. Scott

n April of 1996, NCSE's Board of Directors held its annual meeting in Durham, NC. The Board discussed an idea we hope NCSE members will find exciting: combining our two publications, NCSE Reports and Creation/Evolution. A brief history of these publications may help clarify the reasons for combining them now.

NCSE Reports is the escendent of two earlier publications, a newsletter called the Creation/Evolution Newsletter, begun in 1984, and the even earlier publication by Stanley Weinberg, Memo to the Committees of Correspondence, begun in 1980. Weinberg's Memos were two-to-twenty page occasional communications which launched the Committee-of-Correspondence movement that culminated in the founding of NCSE in 1982. Memos were sent to state representatives—

# NCSE on "Donohue"

On July 24, 1996 NCSE Executive Director Dr. Eugenie C. Scott was a featured guest on the well-known television talk show "Donohue." Phil Donohue, the originator of the issue-oriented daytime talk format, has interviewed such well-known proponents of scientific literacy as astronomer Carl Sagan. As Reports readers may know, this is the final season of the program. It seems appropriate that a discussion of attacks on good science education should be a part of the grand finale.

"liaisons"-who passed information to scientists, teachers, and others who were concerned about the ever-growing creation "science" movement. The late 1970s and early 1980s were busy times for proponents of evolution in the schools: legislation was introduced in at least 22 states—sometimes repeatedly -and members of the Committees of Correspondence worked hard to keep such legislation from passing into law. Weinberg's Memos are fascinating reading from this early period of the creation/evolution controversy.

When NCSE took over the coordination of the Committees of Correspondence, there was a need to supplement the Memos with a publication that could reach a wider audience. Because the Memos had been published from 1980 to 1983, we decided we would count them as volumes 1, 2, and 3; the Creation/Evolution Newsletter began publication in 1984 as volume 4. It was published bimonthly. The name was chosen to parallel a publication of the American Humanist Association, a journal named Creation/Evolution, which analyzed the allegedly scientific arguments found in the literature of creation "science." AHA began publishing C/E in 1980, as a quarterly journal.

In 1989, it became clear that although the creation/evolution controversy was central to NCSE's mission, we were interested in other science education issues as well. Evolution education and education in science as a way of knowing were also (and continue to be) part of our focus. We had just published our first book, the first edition of *Voices for Evolution*. We had plans for educational videotapes and in other ways were expanding beyond

the original creation/evolution problem area that had brought us together. The Board of Directors decided that the newsletter title would be changed to NCSE Reports more accurately to reflect both the broader topical focus of the newsletter and also the role of the publication as the major means of communication between NCSE and its members.

In 1991, we were invited to purchase C/E from AHA and take over publishing the journal. Now that we were publishing two periodicals, we shifted to the current publication schedule of 4 issues of the newsletter and two of the journal. Many individuals already subscribed to both periodicals, but many C/E members were new to us. At that time, we considered combining both publications into one, but decided that this might be confusing to our newly-acquired members. Five years have now passed, and we can safely assume that everyone now knows NCSE as the publisher of both C/E and NCSE Reports!

Each publication has had a different function, and included somewhat different content. The newsletter presents the news: mostly short articles covering current events in the creation/evolution controversy, resources and references for our members, and information about NCSE. The journal presents scholarly analyses of creationist arguments and other lengthier pieces. Sometimes the content and format of the two publications makes it difficult to choose where to publish a given piece.

The Board has decided to publish beginning February, 1997, a single publication that will combine

# . NCSE NEWS .

the features of both publications. It will include scholarly articles that were found in *Creation/Evolution*, "current eyents" and other *Reports* features, plus some longer analytical pieces that we could not publish in either. The model format will be more similar to a science magazine, but focused, of course, on the issues of evolution and science education.

We will continue to have your favorite newsletter features, including letters to the editor, Resources, the discount book and tape sales, and of course, we will continue to be your most reliable source of information on the controversy itself. We anticipate adding new regular and recurring columns on such topics as legal issues, cutting-edge research in evolution, and commentary and analysis. The new magazine (whose title has not yet

been determined) will be published bimonthly, improving our ability to get news to you more quickly than on our current quarterly newsletter schedule.

We will use 1996 to plan the transition, and look forward to serving our members even more effectively with the new publication. Send your suggestions to editor Anj Petto.

# FINDING continued from p. 1

unrelated to evolution. There were a variety of URLs where the term natural selection also appeared, and many were parts of course syllabi from various universities. Many more were totally unrelated to biological evolution.

A search with the term "genetic drift" produced similar results, although with only 30,000 matches! Supposedly the best match turned out to be an obscure music site that is now defunct, although the URL is still in the database. This is a common problem with resources on the Internet. A large number of web sites are administered by parttime volunteers, students who do eventually graduate, or network hobbyists. Resources come and go without notice, or languish and rapidly become out of date.

When it comes to a subject like evolutionary theory, which ranges across many disciplines, from biology to geology, astronomy to physical anthropology and various historical sciences, relevant electronic resources are bound to be highly distributed and in many cases buried within sites and subdirectories that are difficult to search. An alternative method to using search engines is to consult subject directories compiled by others.

The best known among the ever growing number of directories is Yahoo. The Yahoo directory consists of categories that represent popular, informal categories of knowledge and interests. To find "evolution" in the Yahoo catalog, begin by looking under the Yahoo subject guide for science, then in the biology subdirectory (http://www.yahoo.com/science/biology/evolution). There, one finds a hodge-podge collection of links to some 18 sites.

A search conducted on January 30, 1996 turned up links to the popular Talk Origins Archive, a couple of sites devoted to the Aquatic Ape Theory, an obscure opinion survey about the "Origins of Human Life" posted by some unnamed individual, a couple of pages posted by creationists attacking evolutionary theory, and a pointer to a software program for phylogenetic analysis (although not yet completed). There is also a pointer on the Yahoo page to the Evolution section of the WWW Virtual Library maintained by Adam Fagen at the Harvard Biolabs.

Fagen's site also consistently turns up in keyword searches by other search tools, and it is by far the most comprehensive listing of evolution-related sites. Although some sections of the WWW Virtual Library are experimenting with the Library of Congress classification scheme as a system for organizing WWW and other Internet resources, the evolution site does not follow any particular recognized scheme. The selected resources, mostly Web based, are classified only at a broad level. Within these broad classes, sites are listed alphabetically without any annotations or descriptions of the resources. Nor are any search facility and cross-referencing of resources available.

[Ed. Part Two of this article will appear in Reports 16(2) and will explore the contents of sites found at museums, professional societies, and other exhibitors. It will also discuss an innovative concept of a "distributed" web site called the "Tree of Life Project."]

For a listing of evolution-related web resources, see the Evolution section of the WWW Virtual Museum page currently maintained by Adam Fagen: http://golgi.harvard.edu/biopages/evolution.html

# · RESOURCES ·

		Вос	oks		
	LIST	MEMBERS		LIST	MEMBERS
Berra, Evolution and the Myth of Creationism	9.95	7.95	McIver, Anti-Evolution, An Annotated		
Bowler. The Non-Darwinian Revolution	14.95	11.95	Bibliography	15.95	12.75
Cartmill, A View to a Death in the Morning	*29.95	23.95	McKown, The Mythmaker's Magic	25.95	20.75
Clark, Evolution and Cultural Literacy	7.00	5.60	Miller & Van Loon, Darwin for Beginners	9.00	7.00
Dalrymple, The Age of the Earth	24.95	19.95	<b>NEW</b> Moore, The Darwin Legend	11.95	9.50
Dawkins, The Blind Watchmaker	10.95	9.50	Moore, Science as a Way of Knowing: The		
Dawkins, River Out of Eden	*20.00	16.00	Foundations of Modern Biology	32.50	26.00
Deford, A Reparation: Universal Gravitation			Newell, Creation and Evolution: Myth or		
a Universal Fake	6.00	4.80	Reality?	12.95	10.35
Dennett, Darwin's Dangerous Idea	16.00	13.00	Raup, Extinction: Bad Genes or Bad Luck?	10.95	8.75
Diamond, The Third Chimpanzee	13.00	10.40	Robinson & Tiger, eds. Man and Beast		
Ecker, Evolutionary Tales	14.95	12.00	Revisited	17.95	14.50
Eldredge, The Miner's Canary	*20.00	16.00	<b>NEW</b> Ruse, But Is It Science? The		
Eve and Harrold, The Creationist Movement			Philosophical Question in the		
in Modern America	13.95	11.15	Creation/Evolution Controversy	22.95	18.50
Godfrey, Scientists Confront Creationism	11.95	9.50	Sagan & Druyan, Shadows of Forgotten		
Goldsmith, The Biological Roots of Human			Ancestors	*23.00	18.50
Nature	16.95	13.50	<b>NEW</b> Stanley, Children of the Ice Age	25.00	20.00
Gould, ed. The Book of Life	40.00	32.00	Shreeve, The Neanderthal Enigma	*25.00	20.00
Gould, Bully for Brontosaurus	13.95	11.25	Strahler, Science and Earth History, the		
<b>NEW</b> Gould, Dinosaur in a Haystack	*25.00	20.00	Evolution/Creation Controversy	*51.95	41.50
Gould, Eight Little Piggies	10.95	8.75	Strahler, Understanding Science	*27.95	22.25
Gould, Ever Since Darwin	10.95	8.75	Tattersall, The Fossil Trail	*25.00	20.00
Gould, Flamingo's Smile	11.95	9.55	Tattersall, The Human Odyssey	*27.50	22.00
Gould, Hen's Teeth and Horse's Toes	10.95	9.50	Thomson, H.M.S. Beagle: The Story of		
Gould, The Panda's Thumb	11.95	9.75	Darwin's Ship	*25.00	20.00
Gould, Wonderful Life	11.95	9.75	Toumey, God's Own Scientists	16.00	13.00
Gross & Levitt, Higher Superstition	25.95	23.95	Webb, The Evolution Controversy in America	*34.95	28.00
Harrold & Eve, Cult Archaeology and			Weiner, The Beak of the Finch: The Story of		10.50
Creationism	13.95	11.25	Evolution in Our Times	13.00	10.50
Holton, Nonscience and Anti-science	14.95	11.95	Whitfield, From So Simple a Beginning: The	10.05	15.05
Howells, Getting Here	19.95	15.95	Book of Evolution	19.95 14.95	15.95
Jones et al. The Cambridge Encyclopedia of	24.05	20.00	Wilson, The Diversity of Life		11.95
Human Evolution	34.95	28.00	<b>NEW</b> Zimmerman, Science, Nonscience,	20.75	15.95
Kauffman, The Origins of Order	33.75	27.00	and Nonsense		13.93
Larson, Trial and Error	10.95 19.95	8.95 15.95	Kids' Book	( S	
Lewin, The Thread of Life	19.95	15.95	Barker, Maybe Yes, Maybe No	12.95	10.25
Matson & Troll, Planet Ocean		8.00	Jackson, The Tree of Life	*14.95	11.95
Matsumura, ed., Voices for Evolution Maynard Smith, Did Darwin Get it Right?	10.00 18.95	16.25	NEW Prehistoric Zoobooks		
	18.93	10.23	(10-vol. hardback set)		55.00
Mayr, One Long Argument: Charles Darwin	14.00	11.25	Stein, The Evolution Book	12.95	10.35
and the Genesis of Evolutionary Thought McGowan, Dinosaurs, Spitfires and Sea	14.00	11.23	Stein, The Science Book	9.95	7.95
	14.95	12.00	*cloth		
Dragons McGowan, In the Beginning A Scientist	14.73	12.00			
Shows Why the Creationists Are Wrong	19.95	16.00			
Shows why the Creditonists Are wrong	19.93	10.00			

Missed Some Arguments?
Still Available: C/E Index (Issues 1-25) by Ken Saladin
\$8.00 for members

National Center for Science Education



Evolutionists do it . . . with increasing complexity!

# **Poster**

# Smithsonian Chart of Animal Evolution

27" x 39 3/8". Accurately and thoroughly shows relationships between terrestrial and aquatic, extinct and extant groups. Geological scale. List: \$12.00/Member: \$11.00 plus \$3.00 shipping.

# · RESOURCES ·

Diskett	es	
Darwin on CD-ROM Henke: Origin of Theses Sonleitner: Creationist Movies	List:100.00	80.00 10.00 5.00
Sonleitner: Creationist Movies Sonleitner: What's Wrong with Pandas? Stassen: C/E & Newletter Index		5.00 5.00
DOS, 3 1/2" DD, unless otherwise reques WordPerfect or ASCII format (please sp		
Transcri	pts	
1984 Saladin/Gish		8.00
1987 Bakken/Gish		5.00
1988 Saladin/Gish Debate II	10.00	
1989 Zindler/Morris (Noah's Flood)		4.50
1990 Zindler/Gish		5.00
1991 Parrish/Gish	7.00	
Manuscr	ipts	
Sonleitner, What's Wrong with Pandas?		12.00
Audio Cas	sette	s
Debates		
1977 Awbrey/Thwaties/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

Audio Cass	ette	S
Symposia		
1987 Annual Meeting, Full Symposium	2 tapes	10.00
1988 Annual Meeting, Full Symposium	4 tapes	20.00
1989 Annual Meeting, Full Symposium	2 tapes	10.00
1994 AAAS Symposium	2 tapes	14.50
with papers by Ayala, Levitt,		
Ortiz de Montellano, Padian, and Scott		
1993 AAAS Symposium	3 tapes	15.00
"The New Antievolutionism"		
with papers by Miller, Ruse, Scott,		
Marks and Godfrey, and Thwaites		
1982 AAAS Pacific Division Symposium	6 tapes	30.00
"Evolutionists Confront Creationists"		
with papers by Patterson, Dalrymple,		
Craycraft, Sarich, and Thwaites		
1988 AAAS Pacific Division Symposium	3 tapes	15.00
"Communicating Evolution to the Public"		
with presentations by Scott, Moore, Skoog,		
Dalrymple, Beard, and Petit.		
Lecture		
1976 K. Mather, The Scopes Trial	1 tape	4.00
Video Cass	ette	
Institute for Pi	20.00	16.00

NCSE, P.O. B	ORDER FORM ox 9477, Berkeley,	CA 94709-0477		
Name	Quantity	Description		Price
Address				
City				
State/Zip				
Phone (H) (W)				
			Subtotal	
Method of Payment		Shipping		
☐ Check (U.S. dollars) Made out to NCSE	Books:	each \$2.00	Tanali .	
Charge to: Uisa MasterCard	Cassettes, transcr	pts, 1-3 \$1.25		
Credit Card #	and diskettes	4-5 \$1.75		
Exp. Date		6+ \$2.00		
Name (as it appears on card)		CA resid	ents add 8.25%	
	Foreign Orders: W	e will invoice shipping costs	Subtotal	
Signature			TOTAL	

# **NCSE Bumperstickers**

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

National Center for Science Education



# HONK! IF YOU UNDERSTAND PUNCTUATED EQUILIBRIA!

Bumpersticker #2

# · RESOURCES ·

Listing items here or offering to distribute them does not imply NCSE endorsement; annotations are by the editor or various contributors.

These listings often include items available from NCSE, but the list changes with each issue. Consult back issues for other resources—they are still in our files and available for distribution even if we can't keep listing them!

Anon. 1995. Weird and wonderful. *Discover* 16(12). (December).

Averof, M. and M. Akam. 1995. *Hox* genes and the diversification of insect and crustacean body plans. *Nature* 376:420-423. (3 August).

Ayala, F. J. 1995. The myth of Eve: Molecular biology and human origins. *Science* 270: 1930-1936 (22 December).

Bohler, C., P. E. Nielsen and L. E. Orgel. 1995. Template switching between PNA and RNA oligonucleotides. *Nature* 376:578-581. (17 August). See also: Piccirilli, J. A. 1995. RNA seeks its maker. *Nature* 376:548-549. (17 August). The precursor of the RNA world may have been PNA (Peptide nucleic acid).

Boore, J. L., T. M. Collins, D. Stanton, L. L. Daehler, W. M. Brown. 1995. Deducing the pattern of arthropod phylogeny from mitochondrial DNA fragments. *Nature* 376:163-165. (13 July). See also: Friedrich, M. and D. Tautz. 1995. Ribosomal DNA phylogeny of the major extant arthropod classes and the evolution of myriopods. *Nature* 376:165-167. (13 July).; Telford, M. J. and R. H. Thomas. 1995. Demise of the Atelocerata? *Nature* 376:123-124. (13 July).

Bower, B. 1995. Human genetic origins go nuclear. Science News

148(4):52. (July 22). Nuclear DNA indicates that humans left Africa 156,000 years ago.

Bower, B. 1995. Pruning the family tree. *Science News* 148(10):154-155. (September 2). Revision of the fossil species of hominids.

Bower, B. 1995. Ancient human ancestor emerges in China. *Science News* 148(21):327 (November 18).

Carbonell, E., J. M. Bermudez de Castro, J. L. Arsuago, J. C. Diez, A. Rosas, G. Cuenca-Bescos, R. Sala, M. Mosquera, X. P. Rodriguez. 1995. Lower pleistocene hominids and artifacts from Atapuerca-TD6 (Spain). Science 269:826-830. (11 August). See also: Pares, J. M. and A. Perez-Gonzalez. 1995. Paleomagnetic age for hominid fossils at Atapuerca Archaeological Site, Sapin. Science 269:830-832. (11 August); Gutiun, J. C. 1995. Remains in Spain now reign as oldest Europeans. Science 269:754-755. (11 August).

Carroll, S. B. 1995. Homeotic genes and the evolution of arthropods and chordates. *Nature* 376:479-485. (10 August).

Clarke, R. J. and P. V. Tobias. 1995. Sterkfontein Member 2 foot bones of the oldest South African hominid. *Science* 269:521-524. (28 July). See also: Oliwenstein, L. 1995. New foot Steps into walking debate. *Science* 269:476-477. (28 July). Beardsley, T. 1995. These feet were made for walking—and? *Scientific American* 273(4):36-37. (October); Bower, B. 1995. Hominid bones show strides toward walking. *Science News* 148(5):71. (July 29).

Culotta, E. 1995. New hominid crowds the field. *Science* 269:918. (18 August). See also:

Bower, B. 1995. Kenyan fossils unveil new hominid species. Science News 148(8):119. (August 19).; Leakey, M. G., C. S. Feibel, I. McDougall and A. Walker. 1995. New four-million-year-old hominid species from KJanapoi and Allia Bay, Kenya. Nature 376:565-571. (17 August).; Gorman, C. 1995. On its own two feet. Time August 28:58-59. A new species intermediate between A. ramidus and A. afarensis. Dawkins, R. 1995. God's utility function. Scientific American 273(5):80-85 (November).

Culotta, E. 1995. Asian anthropoids strike back. *Science* 270:918 (10 November). See also: Culotta, E. 1995. Asian hominids grow older. *Science* 270:1116-1117 (17 November). Monastersky, R. 1995. Asian fossils reveal primate evolution. *Science News* 148(20):309 (November 11).

Davidson, E. H., K. J. Peterson and R. A. Cameron. 1995. Origin of bilaterian body plans: Evolution of developmental regulatory mechanisms. *Science* 27:1319-1325 (24 November). See also: Kerr, R. A. 1995. Embryos give clues to early animal evolution. *Science* 27:1300-1301 (24 November).

de Duve, C. 1995. The beginnings of life on earth. *American Science* 83(5):4Z8-437 (September-October).

Edgar, B. 1995. Digging up the family bones. *Bioscience* 45(10):659-662 (November).

Ekland, E. H., J. W. Szostak and D. P. Bartel. 1995. Structurally Complex and Highly Active RNA ligases derived from random RNA sequences. *Science* 269:364-370. (21 July). See also: Travis, J. 1995. Artificial RNA enzymes: Big and fast. *Science News* 148(4):53. (July 22).; Wil-

# RESOURCES .

son, C. and J. W. Szostak. 1995. *In vitro* evolution of a self-alkylating ribozyme. *Nature* 374:777-782. (27 April). More efficient RNA enzymes produced by test-tube evolution.

Fischman, J. 1995. Why mammal ears went on the move. *Science* 270:1436 (1 December). See also: Monastersky, R. 1995. The pushy side of mammalian brains. *Science News* 148(21): 330 (November 18).

Fischman, J. 1995. Were dinos cold-blooded after all? The nose knows. *Science* 270:735-736 (3 November). See also: Monastersky, R. 1995. What lurks inside a dinosaur's nose? *Science News* 148(21):330 (November 18).

Flamsteed, S. 1995. Where comets come from. *Discover* 16(11):80-90 (November). See also: Horgan, J. 1995. Beyond Neptune. *Scientific American* 273(4):24-26. (October). Hubble telescope sights objects in the Kuiper comet belt.

Fletcher, C. 1995. A garden of mutants. *Discover* 16(8):48-53. (August). Research on the origin of flowers.

Gutin, J. 1995. Do Kenya tools root birth of modern thought in Africa? *Science* 270:1118-1119 (17 November). See also: Bower, B. 1995. Africa's ancient cultural roots. *Science News* 148(23):378 (December 2).

Holden, C. 1995. Alabama schools disclaim evolution. *Science* 270:1305 (24 November).

Holmes, B. 1995. Message in a Genome? New Scientist 147(1990):30-33. (12 August). Concerns the nature of "junk" DNA.

Horgan, J. 1996. The world according to RNA. *Scientific American* 274(1):27-28 (January).

Hou, L-h, Z. Zhou, L. D. Martin and A. Feduccia. 1995. A beaked bird from the Jurassic of China. *Nature* 377:616-618. (19 October).

Hunter, C. P. and C. Kenyon. 1995. Specification of anteroposterior cell fates in Caenorhabditis elegans by *Drosophila* Hox proteins. *Nature* 377:229-232. (12 September).

Krumenaker, L. 1995. Rhythm section: The pulse of planetary cycles, recorded deep in New Jersey shale. *The Sciences* 14-17. (November/December). Milankovitch climatic cycles are detected in the Newark Basin deposits representing 25 million years of continuous deposition.

Lipkin, R. 1995. Early earth may have had two key RNA bases. *Science News* 148(1):7. (July 1).

Logan, G.A., J. M. Hayes, G. B. Hieshima and R. E. Summons. 1995. Terminal Proterozoic reorganization of biogeochemical cycles. *Nature* 376:53-56. (6 July). See also: Walter, M. 1995. Faecal pellets in world events. *Nature* 376:16-17. (6 July). As a result of the evolution of unidirectional guts and waste matter packed into faecal pellets that sank to the bottom of the sea rapidly, oxygen built up in the overlying waters contributing to the Cambrian radiation.

Marden, J.H. 1995. How insects learned to fly. *The Sciences* 26-30. (November/December). See also: Marden, J.H. and M.G. Kramer. 1995. Locomotor performance of insects with rudimentary wings. *Nature* 377:332-334. (28 September).

McDonald, K.A. 1995. Replaying "life's tape." *The Chronicle of Higher Education*, August 11, 1995:A9.

Mirsky, S. 1995. Silence of the genes. *Scientific American* 273 (3):40-42. (September). Mice and men contain approximately the same number of genes; controlling the number of active genes.

Monastersky, R. 1995. Eruptions Spark Explosions of Life. *Science News* 148(1):4. (July 1).

Monastersky, R. 1995. The Edicaran Enigma: Were the oldest animals actually lichens? *Science News* 148(2):28-30. (July 8).

Monastersky, R. 1995. Birds: Lightweights in the genetic sense. *Science News* 148(15): 229. (October 7). See also: Hughes, A.L. and M.K. Hughes. 1995. Small genomes for better flyers. *Nature* 377:391. (5 October). Birds have smaller introns in their structural genes.

Monastersky, R. 1995. The bird calls that filled Jurassic Park. *Science News* 148(18):277 (October 28).

Noor, M.A. 1995. Speciation driven by natural selection in Drosophila. *Nature* 375:674-675. (22 June).

Panganiban, G., A. Sebring, L. Nagy and S. Carroll. 1995. The development of crustacean limbs and the evolution of arthropods. *Science* 270:1363-1366 (24 November). See also: Roush, W. 1995. Gene ties arthropods together. *Science* 270:1297 (24 November).

Renne, P. R., Z. Zichao, M. A. Richards, M. T. Black and A. R. Basu. 1995. Synchrony and causal relations between Permian-Trias-

# RESOURCES .

sic boundary crises and Siberian flood volcanism. *Science* 269:1413-1416. (8 September). See also: Kerr, R. A. 1995. A volcanic crisis for ancient life? *Science* 270:27-28. (6 October).

Robertson, M. P. and S. L. Miller. 1995. Prebiotic 5-substituted uracils and a primitive genetic code. *Science* 268:1832. (30 June).

Root-Bernstein, R. S. 1995. Darwin's rib. *Discover* 16(9):38-41. (September). A persistent creationist myth about the number of ribs in man.

Roussh, W. 1995. Embryos travel forking path as they tell left from right. *Science* 269: 1514-1516. (15 September). See also: Wolpert, L. and N. A. Brown. 1995. Hedgehog keeps to the left. *Nature* 377:103-104. (14 September).

Shixing, Z. and C. Huieng. 1995. Megascopic multicellular organisms from the 1700-million-year-old Tuanshanzi Formation in the Jixian area, North China. *Science* 270:620-622 (27 October). See also: Centofanti, M. 1995. Multicellular fossils may be world's oldest. *Science News* 148(19):294 (November 4).

Simons, E. L. 1995. Skulls and anterior teeth of *Catopithecus* (Primates: Anthropoidea) from the Eocene and anthropoid origins. *Science* 268:1885-1888. (30 June). See also: Culotta, E. 1995. New finds rekindle debate over anthropoid origins. *Science* 268:1851. (30 June). What was the common ancestor of apes, monkeys and humans?

Sordino, P., F. van der Hoeven and D. Duboule. 1995. *Hox* gene expression in teleost fins and the origin of vertebrate digits. *Nature* 375:678-681. (22 June). See also: Nelson, C. E. and C. Tabin. 1995.

Footnote on limb evolution. *Nature* 375:630-631. (22 June).; Nash, J. M. 1995. Where do toes come from? Time July 31:56-57.

Travis, J. 1995. The ghost of Geoffroy Saint-Hilaire. *Science News* 148(14):216-218. (September 30). See also: Hogan, B. L. 1995. Upside-down ideas vindicated. *Nature* 376:210-211. (20 July).; Holley, S. A., P.D. Jackson, Y. Sasai, B. Lu, E. M. De Robertis, F. M. Hoffman and E. L. Ferguson. 1995. A conserved system for dorsal-ventral patterning in insects and vertebrates involving *sog* and *chordin*. *Nature* 376:249-253. (20 July).; Gonzalez-Reyes, A., H. Elliott and

D. St Johnston. 1995. Polarization of both major body axes in *Drosophila* by *gurken-torpedo* signalling. *Nature* 375:654-658. (22 June). New genetic findings support the idea that vertebrates are upside-down invertebrates.

Zimmer, C. 1995. Life takes backbone. *Discover* 16(12):38-39 (December).

Zimmer, C. 1995. First cell. *Discover* 16(11):70-78. (November).

Zimmer, C. 1995. The Descent of birds. *Discover* 16(10):40-41. (October). Did modern birds spread after the Cretaceous extinction?

# Dinosaur in a Haystack

Stephen Jay Gould

The latest collection of essays from Gould's "This View of Life" column in *Natural History*. "Gould always circles back to the great themes of time, change, and history, always carrying his reader home to the centering theme of evolution—the most exciting natural truth that science has ever discovered."

## Science, Nonscience, and Nonsense: Approaching Environmental Literacy

Michael Zimmerman.

Recently published by Johns Hopkins University Press a good look at science as a way of knowing and what we know when we know it.

# The Darwin Legend James Moore

Did Darwin make a "deathbed confession" to Lady Hope, recanting his theory of evolution by natural selection? Nope! Historian of science Moore (Co-author with Adrian Desmond of the Darwin biography Darwin, the Life of a Tormented Evolutionist) puts to rest the oft-repeated saga. (1996) See review by Padian on p. 3.

## Children of the Ice Age: How a Global Catastrophe Allowed Humans to Evolve

Steven M. Stanley
Famed evolutionary biologist
turns his attention to the evolution of our own species. A
well-written, engaging treatment of human history. (1996)

#### **Prehistoric Zoobooks**

Every elementary school teacher knows Zoobooks, and uses them as entertaining and scientifically reliable sources of information on animals. NCSE has a special offer to sell a 10 volume hardback set of Prehistoric Zoobooks (see ad last page) for a highly discounted price of \$55 for the whole set! Buy one for your local elementary school, or for your children or grandchildren!

# Washington School District Wrestles with Creationism, "Intelligent Design Theory"

# Eugenie C. Scott

rom February through April, 1996, the small town of Sultan, WA, was the site of now-familiar rancorous school board meetings over the question of whether creationism should be taught with evolution. Teacher Meg Town had attended a workshop on creation and evolution at a National Science Teachers Association regional meeting (taught by NCSE board member Dr. Duane Jeffery), so she knew where to go for help when the school board was approached with the request that it introduce creation "science" and Intelligent Design Theory into the curricu-

In February, Meg's science curriculum committee was being pressed to include creation science in the curriculum under preparation. The Superintendent strongly favored a public forum, which the committee preferred to avoid because of its potential to stir up controversy. As an alternative, the committee agreed to sit through a presentation on creation science from two community members. Without the knowledge of the committee, a board member on the committee invited the full board to attend the presentation. Because all meetings of the board must be public, this presentation constituted an illegal meeting, causing an uproar.

During the actual presentation, the presenters made the usual creationist claims, and proposed the textbook *Of Pandas and People* as a good source for information on creation science. In

March, the committee of teachers and community members declined to include creationism in the curriculum they submitted to the board. The board, however, did not initially accept the science committee's curriculum and subsequently scheduled public hearing on the merits of teaching "alternatives to evolution" that teachers had sought to avoid.

▼

The crowd's opinions about creationism in the science curriculum were divided 50:50—a terrific turnout for the pro-evolution side, which is ordinarily outnumbered in such meetings.

 $\blacktriangle$ 

Meg and her husband Mike gathered a committee of concerned citizens to protest the introduction of nonscience topics into the science class, and to support the teaching of evolution. At the April 10 school board meeting, 250 people (about 10% of the Sultan population!) filled the meeting room to overflowing, eager to argue the issue. According to the Towns, the crowd's opinions about creationism in the science

curriculum were divided 50:50—a terrific turnout for the pro-evolution side, which is ordinarily outnumbered in such meetings (see related stories about Ohio hearings, pp. 6, 18). Even so, the board seemed reluctant to adopt the curriculum without creation science added.

On April 15, in a meeting to adopt or reject the science curriculum, the board declined to include creationism, largely for fear of a lawsuit. The ACLU had written a letter to the Sultan Superintendent of Schools, outlining the Constitutional issues involved in teaching creationism. However, modifications were made to the science curriculum, with allegedly "political" statements taken out, i.e., a statement from the National Science Teachers Association (reprinted in NCSE's Voices for Evolution) that teachers should only teach concepts and subjects that fit stated criteria of science. As things now stand, creationism will not be required in Sultan, WA schools. Community members feel that the story is not over, however, and that the board might revisit the issue in the future. As is always the case when creationism and evolution clash at the local level, some teachers become intimidated and will cease to teach evolution.

Thanks to Meg and Mike Town and their fellow citizens for upholding the integrity of science, and also to University of Washington scientists (and NCSE members) Gordon Orians and George Gilchrist for their testimony at the public hearing.

# Close Ohio House Vote Scuttles "Evidence Against Evolution" Bill

# Eugenie C. Scott

n May 28, 1996, state representative Ron Hood's HB 692 was voted down in the Ohio House of Representatives Education Committee by a vote of 8-12. When introduced on April 12, 1996, the bill stated that

Whenever a theory of the origin of humans, other living things, or the universe that might commonly be referred to as "evolution" is included in the instructional program provided by any school district or educational service center, both evidence and arguments supporting or consistent with the theory and evidence and arguments problematic for, inconsistent with, or not supporting the theory shall be included.

The bill was assigned to the Education Committee. Legislators changed the wording slightly, inserting "scientific" before the words "arguments." The Education Committee held a public hearing on May 14, 1996. Four opposition speakers and 28 supporters of the bill attended. NCSE member Steve Edinger reports that "The supporters of the bill were very well organized, with name tags identifying themselves as 'Students for 692,' 'Educators for 692,' 'Parents for 692,' etc. A very sizable share of the supporters had the same set of booklets and pamphlets from the Institute for Creation Research. It appears, as I had suspected, these people were ready to make a show of support even before Representative Hood introduced the bill so 'spontaneous grassroots support' could appear when the hearing started." According to reports, students testified that they had been traumatized by having had evolution presented in their science classes.

One of the citizens testifying was Louisville, OH school board member Andrew Aljancic, who proposed that the legislature adopt the creationist book Of Pandas and People as the standard "balanced treatment" textbook. The chair of the Education Committee replied that Aljancic could promote the book in his home district and that passage of HB 692 was not needed for him to do this. Louisville has been the site since 1991 of a continuing fight over introducing creationism to the science curriculum (see Reports 13(3):p. 1.)

The four speaking against the bill, a decided minority, included NCSE members Steve Edinger and Frank Zindler. Edinger also gave the legislators scores of letters and statements from scientists and other Ohio citizens protesting the passage of the bill.

After the committee hearing, efforts were made to "pass the hot potato" by dropping the issue into the lap of the State Department of Education. Repre-

sentatives argued that the department could implement instruction in evolution and "evidence against evolution" administratively, thus taking the issue out of the hands of the legislature. At the time of this writing, the Department of Education is not considering such action.

When the final vote was taken on May 28, a majority of representatives voted against sending the bill to the floor of the House. There was, however, strong support for the bill in committee. NCSE member Tom McIver interviewed Education Committee member Edward Kaputis (R-Cleveland) who related his enthusiasm for creation "science" and recommended the writings and teachings of young-earth creationism advocate Ken Ham, founder of the "Answers in Genesis" ministry located in nearby northern Kentucky. Rejection of the bill was bipartisan.

NCSE members expressed concern that the appearance of evolution as a "controversial issue" at the state level in Ohio could intimidate teachers from teaching evolution. They also are concerned that, in the words of Steve Edinger, "Creationism is like a vampire, and every time you think the thing is finally dead, someone pulls the damned stake out again." NCSE will keep you informed should new developments in Ohio suggest a need for fresh garlic.

# RUNNING IN PLACE: Survey Finds No Change In Scientific Literacy, Understanding of Evolution

#### Molleen Matsumura

urvey results released on May 23, 1996 by the National Science Foundation show little change from earlier measurements of scientific literacy. While over 70% of Americans think that the results of scientific research are more likely to be beneficial than harmful, few understand how those results are achieved. A full 64% have no understanding of scientific inquiry, 13% understand the concept of comparison, 21% understand some elements of how experiments work, and only 2% understand that a scientific theory is "an explanation of a phenomenon based on testable, repeatable and generally accepted observations." Small wonder that the argument that evolution is "only a theory" works so well at school board meetings!

Jon Miller of the International Center for the Study of Scientific Literacy also reported that while Americans tend to accept scientific facts, "One exception, where they reject standard science, is evolution." Only 44% of those surveyed answered correctly when asked whether "Human beings, as we know them today, developed from earlier species of animals," and only 48% denied that "The earliest human beings lived at the same time as dinosaurs."

In one respect, these figures are encouraging; they represent little change since a 1982 Gallup poll found that 44% of Americans believed that human beings had been created in their present form about 10,000 years ago. It is regrettable that acceptance of evolution has not

increased. However, considering the increasingly intense efforts anti-evolutionists have made in the past decade, it is impressive that they haven't gained ground.

Experience has shown that well-organized, committed activists, such as NCSE's members, can successfully counter these creationist efforts. Beyond that, it is important to build on Americans' friendly attitude to science and technology. The best approach is not to wait for the

next crisis and then oppose creationism, but to promote good science education in your community on a day to day basis. Volunteering for a science curriculum committee, participating in the local science fair, donating books and audiovisual materials to your child's classroom or laboratory, or sponsoring a class trip to a local paleontology museum are ways to enhance science education and become a regular, trusted participant in community-decision making.

# Cobb County Public School District Theories of Origin Policy

The Cobb County School District acknowledges that some scientific accounts of the origin of human species (*sic*) as taught in public schools are inconsistent with the family teachings of a significant number of Cobb County citizens. Therefore, the instructional program and curriculum of the school system shall be planned and organized with respect for these family teachings. The Constitutional principle of separation of church and state shall be preserved and maintained as established by the United States Supreme Court and defined by judicial decisions.

#### **Regulations:**

In respect for the family teachings of a significant number of Cobb County citizens, the following regulations are established for the teaching of theories of the origin of human species in the Cobb County School District:

- The curriculum of the Cobb County School District shall be organized so as to avoid the compelling of any student to study the subject of the origin of human species.
- The origin of human species shall be excluded as a topic of curriculum for the elementary and middle schools of the Cobb County School District.
- 3. No course of study dealing with theories of the origin of human species shall be required of students for high school graduation.
- 4. Elective opportunities for students to investigate theories of the origin of human species shall be available both through classroom studies and library collections which shall include, but not be limited to, the creation theory.
- 5. All high school courses offered on an elective basis which include studies of the origin of human species theories shall be so noted in curriculum catalogs and listings which are provided for students and parents for the purpose of course selection.

# New Anti-Evolution Strategy Rejected by New Hampshire Legislature

# Molleen Matsumura and Andrew J. Petto

ince 1982, when Judge William Overton ruled in McLean vs. Arkansas that state laws mandating "equal time" for creation "science" violate the Constitution, most efforts to restrict the teaching of evolution have consisted of challenges in individual school districts. However, in recent months, creationists have renewed attempts to influence science education at the state level. Meanwhile, other efforts to limit the ability of state and local Boards of Education to determine curriculum have been based on arguments that various elements of the curriculum violate parents' rights to raise their children as they see fit. When "parental rights" are made an issue, the attack on evolution may be obscured if it is included as one item on a long list of such items as "values clarification," and alcohol and drug education.

In New Hampshire, a "Parent and Pupil Rights" bill that would have restricted the teaching of evolution was introduced in late February. Bill 653-FN called for each school to distribute letters that might be signed by pupils' parents or legal guardians; the letters requested that "my child NOT be involved with any school activities or materials listed below, unless I have first reviewed such . . . and have given my written consent." The list of subjects included "use of moral dilemmas," "nuclear policy," and "organic evolution, including Darwin's theory." The text of the bill and the list of supposedly objectionable topics closely resembled a form letter published in *The Phyllis Schlafly Report*, with advice that parents influence curriculum by sending these letters to teachers and administrators.

Fortunately, the bill was not adopted without drastic revisions. The final product, less than one-third as long, simply affirmed that instructional materials should be available for parental inspection. The language of the revised bill was similar to existing federal legislation restricting schools from conducting surveys about certain kinds of personal information without prior permission of parents.

While this particular bill failed, it must be understood as part of a nationwide effort to influence curriculum outside the usual

> In its monthly newsletter, NEA Today, the National Education Association ran a two-part series on the PPRA and the misapplication of the "Hatch" Act in the public schools. This series ran in the February and March, 1996 issues. Readers interested in this issue and in the NEA's legal analysis should contact NEA Today at neatoday@aol.com; 202/822-7201; or write to them at 1201 16th St NW, WASH-INGTON DC 20036.

process of public review of curriculum developed by professionals. The new "Parental Rights" strategy has emerged in recent proposals for a new Constitutional amendment, federal laws, and proposed legislation in the state of Washington. According to the Washington, DC-based organization People for the American Way, parents objecting to particular books or curricula often phrase the objection in terms of "parental rights." In an inversion of this argument, Georgia's Superintendent of Education recently asked the state's Attorney General whether public schools have the "right" to "contradict" parents by teaching evolution. (See also Cobb County, p. 19.)

So far, the New Hampshire bill is the only "parental rights" legislation that has included evolution among its provisions.

#### What You Can Do

If you learn that "parental rights" legislation is being considered in your state, please inform NCSE so we can learn whether evolution is mentioned as a potentially forbidden subject. If you are able, contact your legislator's office, request a copy of the legislation, and forward it to NCSE. Don't assume that, "NCSE already knows." Somebody has to be the first to tell us, and you may be the one. And be sure to let us know whether you need printed information that will help you explain to your fellow citizens why teaching evolution is simply fulfilling children's right to a good education.

# Creationism Lesson in New Mexico: NOT!

# Mark Boslough

n elementary school science teacher is teaching a unit on the origins of life. He teaches evolution and the scientifically-accepted geologic time scale. He decides that, to be fair, he should also show a videotape showing the creationist version of the origin of life. He recognizes that this is a controversial subject, so he sends out permission slips for parents of his 125 fifth-grade students to sign. One of the students' parents tells a friend who tells a local scientist, who strongly objects and calls the school on the morning the videotape is to be shown. The principal refuses to put a stop to the creationism lesson. She cites the school district's approval of comparative religion classes in high school as evidence that religious discussions are acceptable.

The scientist calls the ACLU and the local newspaper and television stations. The videotape is shown to the children and the district is hit with a lawsuit. The science teacher and the principal both get into hot water, and the district spends precious time and resources on the resulting legal problems. Angry parents on both sides of the issue are quoted on TV and in a front-page newpaper story. The scientist and his friends celebrate their victory with beer, high-fives, and "in-your-face" testosterone-inspired statements to the press.

Question: Who is the winner? Are the teacher and principal going to be predisposed to good science education or merely to staying out of trouble? Are parents who dislike the ACLU going to have a high opinion of scientists? Is the school district going to consider scientists to be allies or adversaries? Will the students be rewarded with better science lessons in the classroom?

The first paragraph decribes what happened last month, but (fortunately) the events of the second paragraph never transpired. After I (the scientist) spoke to the principal, I called the National Center for Science Education (NCSE) hotline at 1-800-290-6006. I faxed to the school a page of NCSE information, an Albuquerque Tribune article about a Santa Fe teacher who got in trouble for showing creationist films last year, and Dave Thomas' "The Trouble with Creationism" op. ed. piece. Eugenie Scott and Molleen Matsumura of NCSE also e-mailed me information on court cases and the legal foundation for banning creationism in public schools. I promptly forwarded these messages to the school.

Later that afternoon, I received the following fax from the school principal on Albuquerque Public School letterhead:

Dear Mr. Boslough:

As per our conversation this morning, we postponed the viewing of the creationist film.

After reviewing your fax regarding the Supreme Court decision *Edwards v. Aguillard*, we have canceled showing the film.

I appreciate your information on this subject.

On receiving the letter I felt as if we had just won a small battle.

After some reflection I realized that from the teacher's and principal's perspective I might be seen as nothing more than a meddle-some anti-religion civil-liberties activist. If true, my small victory might do absolutely nothing to help win the war against anti-science creationism.

That thought prompted me to write a letter to the principal explaining that my purpose was to preserve excellence in science education, not to keep religion out of school. I offered to sit down with the science teacher to help him understand the issues. I also offered to come to the school and talk about the comet impact on Jupiter, or the killer asteroid impact on Earth or some other subject related to my research that the kids would like.

A couple of weeks later I was invited to the school where I spent the day explaining to the children how scientists go about figuring things out, what it is like to be a scientist, and that you don't have to be a scientist to think scientifically. From the classroom it was obvious that the teacher cares about science education; the kids are enthusiastically raising a pair of hedgehogs, hamsters, a boa constrictor, an iguana, a ferret, a tarantula, and gerbils (which they feed to the snake). They are even growing tomato plants from seeds that have been in orbit aboard the space shuttle.

I made friends with the teacher, and I would gladly go back to the school to help out. He graciously accepted a copy of the current *Skeptical Inquirer*, and the book

NOT! continued on p. 22

# · LETTERS ·

■ I have had the opportunity to read in your Fall 1995 *NCSE Reports* the article by Susan Jordan, "Update: Hemet Hedges on Evolution." As Superintendent for the Hemet Unified School District, I must make the record complete and accurate with all due respect to the points of view of NCSE, the author, and/or any other party to the debate over evolution and creationism.

First, I question the accuracy of the first paragraph of the article that states that the Governing Board majority has "censored library books, and enforced its policies with reprisals against individual teachers." These claims have [never] been substantiated through either administrative or legal process.

Second, I was responsible for investigation of the com-

plaint and its resolution which was filed by Susan Jordan and her husband. It is true that supplemental materials were brought into classroom instruction that were not appropriate as they brought creationism into science instruction. This has been corrected and a new Board Policy was presented publicly to the Governing Board. Much public input was provided with coverage by the media. As reported, Dr. Padian participated in this public discussion before the Governing Board and offered changes to the proposed policy from the Superintendent. However, these changes were determined to be non-substantive and the Governing Board adopted the Superintendent's proposed policy. I should also state that to date there has been no subsequent or legal challenge. The professional staff have clear direction, and students utilize state- and district- approved textbooks that include the teaching of the theory of evolution in accordance with law.

Third, elementary and secondary education as provided by the public school system places constraints on academic freedom that [are] not required in a voluntarily selected private school or in higher education attended by adults. In our public schools, academic freedom must be balanced between the constraints of law and the ethics of the teaching profession. Therefore, the proper venue for deciding the debate over the teaching of the theory of evolution and creationism is either in the legislative branch or the judicial branch of our governmental system. Furthermore, in a representative form of government where elected officials, such as those serving on the Governing Board of a public school district, are responsible to their community for representing the will of their constituency is characteristic of our belief in our political system. Important issues are to be debated passionately and based upon the facts bearing on those issues; then, the action of the majority gives direction.

In closing, while Sue Jordan may not be satisfied, with the action of the Governing Board, the actions taken are legal and current instruction is in accordance with law.

Stephen C. Teele, Ph.D. Superintendent Hemet, CA

NCSE Reports welcomes letters from its readers via mail, fax, or email. In writing to our editors, please keep in mind the following.

- Letters of 200 words or fewer are more likely to be printed in their entirety. The editors reserve the right to edit the letters for content and style.
- All letters must be signed, though the writer's name may be withheld upon request.
- 3. All letters must contain a return address, although only the writer's affiliation (if any) and city and state will be published. We would also appreciate the inclusion of a daytime phone or fax number or email

address, in case we need to contact you.

- 4. Any quotations or excerpts of text not appearing in previously published NSCE sources must be accompanied by sufficient information for the editors and our readers to be able to locate the original source.
- The publication of all letters to the editor is at the discretion of the NSCE editorial staff and board.

Editor, NCSE
Post Office Box 8880
MADISON WI 53708–8880
ajp3265@madison.tec.wi.us
voice: 608/259-2926
fax: 608/258-2415

# NOT continued from p. 21

Voices for Evolution which has dozens of position statements from scientific organizations (professional associations and Academies of Science), and statements from educational, civil libertarian, and religious organizations, as well as legal references.

That evening I got a call from a parent who said that her child really enjoyed the lesson. The mother put her girl on the line so that she could thank me herself. That was much better than being on the front page of the newspaper.

I believe that there were a lot of winners in this case: the school district, the principal, the teacher, the students, and science education. The only losers were the anti-science "creation scientists." To them I don't mind saying "In your face!"

# PREHISTORIC ZOOBOOKS

# The Unfolding Story of Life on Earth

Written and Illustrated for Children of All Ages

Describes, simply and directly, how life began and how it has changed. Covers the beginning of the universe to the reign of mammals. A careful and accurate depiction of the concepts of evolution, described in non–technical, easy to understand language.

Library Bound
Hardcover Edition
Titles Include
Life Begins
Life Expands
Plants and Animals
Swimmers
Out of the Water
Reptiles
Dinosaurs
Flyers
Mammals I
Herbivores
Mammals II





- Hundreds of illustrations that explain complex concepts easily and instantly.
- A masterpiece of scientific explanation.
- Each volume contains a summary review of key concepts, and index for easy review and reference.

Volume 15: 4

23

# National Center for Science Education P.O. Box 9477 Berkeley, CA 94709-0477

Forwarding and Return Postage Guaranteed Address Correction Requested

Non-Profit Org. U.S. Postage PAID Madison WI Permit No. 829

16(1)

#### **Editors**

Andrew J. Petto and Laura L. McMahon Post Office Box 8880 Madison, WI 53708-8880

#### Supporters

Bruce Alberts, NAS Francisco J. Ayala, UC/Irvine

Stephen G. Brush, U. MD Johnnetta B. Cole, Spelman Bruce Collier, U. Alberta Joel Cracraft AMNH G. Brent Dairymple. OR State Richard E. Dickerson, UCLA James D. Ebert, Ches. Inst. of Johns Hopkins Niles Eldredge, AMNH Milton Fingerman, Tulane Douglas J. Futuyma, SUNY/SB Laurie Godfrey, UMass Stephen J. Gould, Harvard Donald Hornig, Harvard Duane E. Jeffrey, Brigham Young Donald Johanson, Inst. Hum. Origins Thomas H. Jukes, UC/Berkeley Patricia Kelley, U. ND Philip Kitcher, UC/San Diego Richard C. Lewontin, Harvard Paul MacCready, AeroVironment, Inc. Kenneth Miller, Brown John A. Moore, UC/Riverside Dorothy Nelkin, NYU William S. Pollitzer, U. NC Joseph E. Rall, N.I.H. Michael Ruse, U. Guelph Carl Sagan, Cornell James Skehan, S.J., Weston Observatory Frank Sonleitner, U. OK

#### Officers and Directors

Kevin Padian, *President* Museum of Paleontology, UC Berkeley, CA 94720

Tim D. White, UC/Berkeley

Jack B. Friedman, Past President Robert M. West, Secretary-Treasurer Fred L. Beyer, Director John R. Cole, Director Duane Jeffery, Director Andrew Petto, Director Frank Sonleitner, Director

Elizabeth Stage, *Director* Eugenie C. Scott, *Executive Director* 

NCSE is a nonprofit, tax-exempt corporation affiliated with the American Association for the Advancement of Science and the National Science Teachers Association

# Membership in the National Center for Science Education brings you:

- One year's subscription to NCSE Reports: 4 issues
- One year's subscription to Creation/Evolution Journal: 2 issues
- 15-20% discount on selected books
- Participation in NCSE's diverse efforts to promote and defend the integrity of science education

			PTION/DON eley, CA 9470			
Name			Occupation:			
Address						
City			☐ Check if you object to your name being			
State/Zip			given to other nonprofit organizations.			
Phone (H)	(W)	9 1				
NCSE Membership One Year	U.S. \$25	Foreign \$32	Foreign Air \$39		Membership	
NCSE Life Membership \$500				Contribution		
Tax Deductible Contribut	ion to NCSI	<b>E</b>				
Back Issues				•	m - 177	
NCSE Reports / C/E Newsletter (Vols 1–15, \$3 per issue; \$18 per volume; all 15 vols., \$195)				NCSE Reports		
C/E Journal (1-9 copies, \$6 each; 10 or more, \$5 each; nos. 1-35, \$100)					C/E Journal	
Shipping: \$1 for 1 issue; a maximum of \$10—even NCSE Reports sent bulk m Mexico, and surface mail o	for all 35 bad ail in U.S., f	ck issues. irst class to C	anada and		Shipping	
TOTAL					TOTAL	
☐ Check (U.S. dollars)		Charge to:	☐ Visa	☐ Master C	ard	
Credit Card #				Exp. Date	e:	
Name (as it appears on	card)					
Signature						

#### Subscriber information

Subscriptions are fully tax deductible. NCSE is tax-exempt under Federal IRS Code 501(c)(3) and the corresponding provisions of the California law. Amounts paid to NCSE are tax-deductible to the extent permitted by law.

#### Missing issues

If your issue fails to arrive or is badly damaged in transit, send us the date of issue and we will rush you a replacement.

#### Moving to a new address?

Let us know your new address as early as possible and we will update our records of your subscription accordingly. Please allow 4 weeks for an address change.

Please mail all correspondence about your subscription to:

NCSE

P.O. Box 9477 Berkeley, CA 94709-0477 (510) 526–1674 (800) 290-6006