

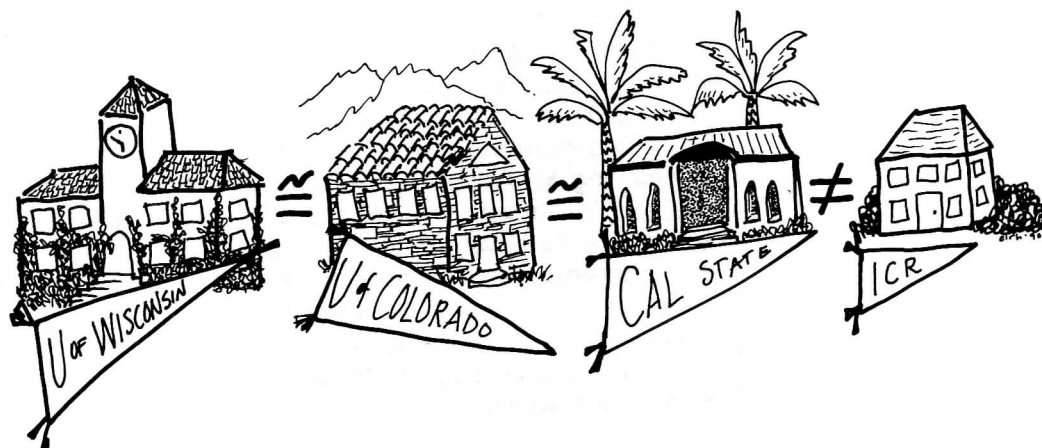
IN THIS ISSUE:

- **Nucleus** p. 2
- **Letters** p. 3
- **CC Update**
 - Creationists in Ontario p. 6
 - Alabama Update p. 8
 - BACC Science & Texts p. 10
 - Sillman vs. Gish III p. 11
- **Current Contents** p. 13
- **News**
 - ICR Report in Context p. 14
 - Excerpts of ICR Report p. 15
- **Resources**
 - Review of *Of Pandas & People* p. 16
 - Review of *The Hominid Gang* p. 19
- **Keeping Tabs**
 - Noah's Ark Found - 1883 p. 21
 - Idaho Creationist Speaks Out p. 22

ICR's Graduate Programs Blasted by State Committee!

The Institute for Creation Research, internationally known flagship academy for training in "scientific" creationism, was informed by a California committee of scientists on January 12, 1990, that its masters degree programs in Geology, Biology, Astro/Geophysics, and Science Education are deficient in every major category of evaluation. The report was written at the behest of the State Department of Education, which is in the process of evaluating ICR's license to grant graduate degrees in California. The committee, including a member hand-picked by ICR, listed deficiencies in curriculum, faculty and instruction, facilities and equipment, and academic achievement. Though reserved and understated in tone, the report is a straightforward indictment of numerous failings of ICR's program. (See article this issue, "Excerpts from the Committee Report," p. 15)

Unaccredited institutions like ICR must have programs comparable to those of accredited institutions; therefore, ICR was required to submit names of institutions to which its masters programs should be compared. It chose Loma Linda University, Abilene Christian University, the University of Colorado, the University of Wisconsin, and several California State Colleges. The evaluation committee consisted of five scientists from California State College, Long Beach, UC San Diego, UCLA, and Cedarville College (Cedarville, OH). The committee visited ICR headquarters outside of San Diego and sat in on classes, interviewed students and faculty, and read several of the masters theses in the library. All five members signed the evaluation — there was no split decision as there had been in 1988 (see "ICR Approval Decision In Context," p. 14). The report concluded, "The issue is one of quality control, and of maintaining uniform and recognized standards for the M.S. degree in science and science education throughout the state and nation. The ICR programs do not meet these standards." The committee member ... see ICR p. 12



NUCLEUS

From the Editor

As we begin a new decade, it is easy to see that we've made progress in the fight against those who would pervert science education for sectarian purposes. In 1980, creationists were confidently promoting "creation science" and introducing bills in state legislatures to mandate teaching creation in 6 solar days, a young earth, and a universal Flood. Creationist textbook censors were influential in Texas and California, and the teaching of evolution suffered as a result.

During the last 10 years, the creationists have lost every major battle. The courts have repeatedly recognized "creation science" for the religious sham it is and has always been, and many creationists now desperately try to cloak their wolf in another fleece — Intelligent Design, Abrupt Appearance, neocatastrophism. Unlike Henry Morris's ranting about Satan, some of the latter are subtle enough to fool the unwary. *Of Pandas and People*, a creationist travesty reviewed elsewhere in this issue, contains much of the usual nonsense, but it is concealed well enough that the publisher got favorable endorsements from scientists not previously known as creationists. Such books will be the foci of important battles in the 1990s.

At the other extreme are ICR's amazingly successful "Back to Genesis" seminars, a late 1980s innovation that promises to be important in the 1990s. These seminars seem to pretty much abandon the pretext of science for old-fashioned Bible-thumping, Satan-bashing revivalism. Although the seminars must bring in huge sums of money and pad out the *Acts & Facts* mailing list, it is not clear how they translate into political activism at the local level, which has always been the strength of creationism. We hope to get a measure of this in the near future.

Another thing we hope to accomplish in the near future is to get *NCSE Reports* on a regular and timely schedule. As regular readers know, we have never managed that for long. My first issue as editor was late, and I've since produced issues at about 7-week intervals. (A bimonthly publication schedule requires producing an issue every 8 $\frac{2}{3}$ weeks.) I hope to maintain the 7-week cycle until we get on schedule, and then I intend to *stay* on schedule (famous last words).

Our Grateful Thanks

The following individuals and organizations have kindly donated \$100 or more to NCSE during 1989. We very much appreciate their contributions to the support of NCSE and sincerely thank them.

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Creationist Text Reviewed

In *NCSE Reports* 9(2):21, we warned of a forthcoming creationist book intended for public schools. This book, *Of Pandas and People*, appeared in August 1989, and it has been popping up all over. The publisher had a booth at the National Association of Biology Teachers annual meeting in San Diego and full-page ads in *The Science Teacher* (the publication of the National Science Teachers Association), and *Curriculum Product News*. It has been submitted for adoption in Alabama and Idaho, and is also expected to show up in other states.

The publisher of this alleged science text is Houghton Publishing Company, of Dallas, Texas. But who or what is Houghton Publishing Company? It is not listed in the Publishers volume of *Books in Print* or in *Publishers Directory 1989*. Last spring, NCSE Executive Director Eugenie Scott called Houghton and asked about *Pandas*. She was told that Houghton publishes agricultural works, and that *Pandas* is their first textbook (see *NCSE Reports* 9(2):21). Yet a recent search for Houghton in the University of Minnesota's computerized library catalog came up blank. It seems strange that a large university — especially one with a major agricultural school — does not hold a single Houghton agricultural publication.

Houghton obviously is not a big player in either textbook or agricultural publishing. Who are they, *really*? They seem to have ties to the Foundation for Thought and Ethics (FTE), which financed production of *Pandas* and holds the copyright. Are they merely a "secular" stalking horse for FTE, and has the latter subsidized (or otherwise underwritten) the publication of *Pandas*? If you can answer these questions, please write to NCSE.

Because it is the first creationist textbook published by a (supposedly) secular publisher, and because of the cleverness with which it is written, it is important that the true nature of *Pandas* be disseminated as widely as possible. Eugenie Scott reviews the book in this issue (pp. 16-18). *Pandas* is also reviewed in NCSE's textbook review newsletter, *Bookwatch Reviews* 2(11).

If you live in an adoption state, or if your district is adopting biology books this year, please check to see whether *Of Pandas and People* has been submitted for adoption. You may reproduce Scott's review and give it to decision-makers. NCSE has additional analyses of the book available upon request.

Competence vs. Questionable Credentials

Having made the acquaintance of Glen Kuban, and knowing his modesty, I would like to add a footnote to his article on the credentials of two Texas creationists.

Kuban correctly notes that Baugh and Patton's "mantrack" claims must be judged on their merits (therefore his article in the previous *NCSE Reports*), whatever the nature of the duo's credentials. It is odd, then, that Baugh and Patton would consider the pursuit of questionable degrees necessary or desirable. If they consider their case to be genuinely persuasive, why risk tainting it, even by association?

Kuban himself, who earns his living (and research funds) as a computer programmer, provides the obvious counter example. He came to the Paluxy nine years ago with a biology B.A. and the experience of an amateur fossil buff. (Many may not know that he arrived with the inclination to document, rather than debunk, the alleged human footprints.) The study of dinosaur tracks has been his avocation ever since.

Because of the quality of his work (even creationists "mantrackers" have been caught using his meticulous maps), Kuban was encouraged to submit papers to the 1st International Symposium on Dinosaur Tracks and Traces by professional researchers with whom he and Ronnie Hastings had shared their data and findings. (His papers — on elongate dinosaur tracks, and color distinctions — appear in *Dinosaur Tracks and Traces*, Gillette & Lockley, eds., Cambridge University Press, 1989.)

Even if it is the case that amateurs do not frequently receive this kind of recognition, a cheesy diploma is no answer. It just may be that work of professional quality can provide its own "credentials". The obverse of this hypothesis may well apply to the case of "Dr." Carl Baugh and his "mantracks."

LETTERS

Scott Faust

Nontheistic Miracles

Thanks for another great issue of *NCSE Reports* (Sept-Oct 1989). As always, I enjoyed it thoroughly. Highlights were the reviews of the creationist conference at Bryan College.

However, I take issue with Frank Lovell's assertion (p. 1) that *theism* and *naturalism* form a true dichotomy regarding origins. They do not.

Creationists often make this assertion because it gives them an argumentative edge. I'm sorry that Lovell should fall for it. The dichotomy claim completely sidesteps the notion of *non-theistic* miracles, a notion that is woven deeply into many primitive mythologies and mystical schools of thought.

Imagine, for example, a modern-day mystic resurrecting the old notion of spontaneous generation. We ask him, "But how does spontaneous generation occur?" He responds, "It's magic!" The notion is crazy, of course, but is it any more crazy than the idea of a god-directed miracle? Scientifically, is it any less testable? Think about it.

Miracles are, by definition, violations of physical law; so if a theistic creationist posits one miracle, what is to prevent a mystical creationist from positing another miracle that just happens by itself?

Nothing, of course. Once you open the door to the supernatural, everything floods in.

For a specific example of a non-theistic creationist miracle, you need look no further than old Norse mythology. In the Norse origin myth, the first two primordial beings, Ymir and Audumla, were not the result of the intelligent creative act of any god; they formed spontaneously from the ice and mist in Ginnungagap, the great void. By the way, Ymir himself was not a god, strictly speaking, but a proto-god; Audumla was a cow.

If educators and scientists make a strong effort to refute the creationist claim that theism and naturalism form a dichotomy, it will seriously weaken the creationist position. Creationists will no longer be able to "prove creation" by criticizing mainstream evolution theory. In effect, it will force creationists to argue positively, rather than negatively.

Kenneth E. Nahigian

SOR and ICR

Thanks for the kind words about Students for Origins Research in the September-October issue of *NCSE Reports*. I would, however, like to point out a minor factual error. In your article, "Creationism in Flux," you stated that SOR "was founded about a decade ago with seed money from ICR." This is not true. SOR was started with money from the not-so-deep pockets of its undergraduate founders. We have never received any funds from ICR other than the payment of membership fees for individual members.

Mark Hartwig
Executive Director
SOR

Oops! I apparently misconstrued and/or misremembered something an SOR member once told me. Sorry about the error.

—Editor.

Creation in the Schools

On November 22, 1989, I happened to catch the last part of Jay Sekulow's TV show on Trinity Broadcasting Network. Sekulow is a fundamentalist lawyer who heads C.A.S.E. (Christian Advocates Serving Evangelism), a San Francisco legal group that defends Christian religious rights. (Sekulow represented Jews for Jesus in their recent Supreme Court case regarding proselytizing in public places.)

Sekulow and his guests that day were vigorously promoting the teaching of creationism in public schools, using the usual arguments: fairness of presenting both theories of origins, unfairness of discriminating against Christian believers by exclusive teaching of anti-Christian evolution, etc. One guest, Bill Jack, explained how he teaches creationism in public museums in Colorado. He compared himself at length to Paul in Athens lecturing to the Greeks in front of their tomb to the unknown god. Revealingly, he stated that he did not promote creationism because of its "intellectual" worth (which, he stated,

would be a "waste"), but he instead stressed that his purpose was to "teach Christianity." His promotion of creationism was, he affirmed, a religious, "missionary" activity.

Sekulow himself added something revealing in the few minutes I was tuned in. He said that, legally, creation-science can be taught in public schools as an "alternative [scientific] theory." But, he hastened to add, he believes it is a "fact" — not a theory, but a certainty. Compare this to the protestations of Bird and other creationists (including Sekulow himself) that what they are advocating is science, not religion, and that they are merely seeking to promote better, fairer science teaching.

Tom McIver

The Perils of Teaching Evolution

I am a high school science teacher who has been teaching biology for the last 18 years. I firmly believe that evolution is the unifying concept of modern biology. I have never had any trouble teaching evolution until this year (1989) when one student vehemently protested my teaching of the subject. She and her religion teacher, who is also a lawyer, even wrote letters to my principal, superintendent, and the New Jersey Commissioner of Education stating that my teaching is "immoral" and demanding that my license to teach be revoked! I have received full support from my school administrators. So far no action has been taken and things have quieted down. Even though this episode will not prevent me from continuing to teach evolution as a fundamental part of the biology curriculum, it cast a chill over my department and my colleagues, who may be willing to gloss over the chapter.

I find the articles and letters in the newsletter and journal helpful in explaining evolution to my students and in dispelling disinformation that they may have picked up elsewhere. So keep up the good work.

John Samtak

De Beer and Homology

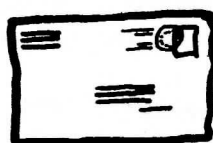
In Thwaites's review of Denton's *Evolution: A Theory in Crisis* (NCSE Reports, 9(4):14-17, July/August 1989), he wrote, "Only in creationist writings do we read of the 'Special Theory of Evolution' and the 'General Theory of Evolution.'"

In fact, this "special" vs. "general" distinction traces (I believe—I haven't searched the literature exhaustively) to the 1960 volume *Implications of Evolution*, by the British physiologist G.A. Kerkut. Kerkut is a skeptic of evolution but not a creationist.

On another point, Thwaites commented on De Beer's late publication on homology (*Homology, An Unsolved Problem*), in particular, his eyeless *Drosophila* argument. "It is distressing," he wrote, "that he was able to fool Ph.D.s as well." Indeed: Having grubbed about in the homology literature for the past couple of years, I've run across many favorable references by astute evolutionists to this 1971 publication. For instance, a recent issue of *Evolution* (43(6):1157-1171, 1989), carried a paper on homology by G.P. Wagner, in which Wagner cites the eyeless *Drosophila* case as a "good example" (p. 1159) of the incongruence of anatomical characters and genotypes. In her paper, "The Biological Basis of Homology" in *Ontogeny and Systematics* (C.J. Humphries ed., Columbia, 1988), V. Louise Roth also cites De Beer and the eyeless phenotype, under the heading "Homology cannot be reduced to a simple correspondence between genes" (pp. 6-7).

I haven't yet sorted out my own thinking on the point; his "suppressor" argument, however, seems reasonable to me. I do think Thwaites should take his case (suitably dressed up with genetic details) into the evolutionary literature, to clarify matters (maybe a short piece in *Trends in Ecology and Evolution*?).

Paul A. Nelson



CC UPDATE



Confronting Creationists in Ontario

J. Richard Wakefield

Creationists are keeping us busy in Ontario. The most important recent event was the appearance of two creationist speakers at the 1989 Science Teachers' Association of Ontario (STAO) annual conference. Thousands of science teachers attend STAO conferences for lectures on science, education, and environmental concerns. Many of the 300 speakers were well-known in Canada — David Suzuki, Jay Ingram, and Robert Bateman. I attended with Rob Day, who flew in from Manitoba. Rob has done extensive investigation into Setterfield's changing speed of light theory.

At the 1988 STAO conference, creationist Lambert Dolphin lectured on Setterfield's decreasing speed of light theory. This year, Dolphin was to speak on how this phenomenon causes a difference between atomic and dynamic time. The program also included a lecture by Robert V. Gentry on his "evidence" for creation from polonium halos. I assumed that creationists within STAO invited these two to speak, but I was to learn otherwise.

The first creationist speaker was Gentry, who gave his usual spiel; he has spent 20 years investigating polonium halos, the scientific community ignores him or censors his papers, and so forth. Rob and I sat in back and watched the crowd react. Gentry talked over the heads of most of the 40 or so who attended. Others shook their heads when he made blatantly false statements, such as when he said geologists claim Precambrian granites solidified soon after the earth's accretion.

When he was clearly running out of time, Gentry tried to go on, but when pressed to take questions, he finally agreed. I got in the second question. After identifying myself, I held up my *Journal of Geological Education* article and a rock sample and explained that Gentry's halos came from demonstrably intrusive rocks.

Heated exchanges followed, and Gentry made some interesting state-

ments. A recent graduate student in geochemistry pointed out that Gentry's proposed falsification test involving granite synthesis is flawed for several chemical reasons. "You are wrong," was Gentry's dogmatic reply.

Pressed about the geological evidence, Gentry said (I paraphrase), "Geologists think you can go into the field and the rocks will tell you how they got there. However, they are wrong; the rocks do not tell you anything about their history." He said there will be an explosion one day soon when physicists and engineers realize that geology is not science! Later, he implied that the geological evidence against him is "Wakefield's interpretation." I responded that it is not my interpretation, but evidence gathered by thousands of geologists in over a century of field observations.

At one point, Gentry held up his famous drill core of rhyolite, which he says came from 1600 feet down. I asked him to explain the geological formation it came from. He would not, so I did. The sample came from a pipe that fed a volcanic flow, and 1600 feet is not deep enough for the term "granite" to be used.

A creationist woman grilled Gentry about his granite synthesis challenge. Why doesn't he do it himself? And how can he jump to a supernatural explanation just because he cannot find a natural one? Gentry repeated his assertion: No one has reproduced a hand sized "granite" with polonium haloes; until someone does, he is right and that is that.

John Percy, Honorary President of STAO, linked Gentry's claims to the alleged changing speed of light, saying that creationist "evidence" is not evidence at all and does not belong in a science forum. Gentry made clear that he does not accept the changing speed of light. Interesting; both Dolphin and Gentry were lecturing to the same church group that night!

Lambert Dolphin lectured the next day. The 90 people who attended did not hear what they expected. According to Dolphin's abstract, he was supposed to describe how the changing speed of light forces a difference between dynamic and atomic time. Instead, he

rambled for 23 minutes about how we perceive time. To children, time appears to go forever; to adults, time seems to pass faster. Dolphin noted that when he took LSD for the "religious experience," it made him perceive time differently. He mentioned only in passing the "possibility" that light speed changes may affect time-keeping, adding quickly, "I'm not going to talk about that today."

Suddenly it was over. No science, and not one shred of the paper described in his abstract. Many were disappointed, and a lady asked why he was there. Rob Day asked, "Dr. Dolphin, is there any reason why we should not be grossly insulted by your presentation, when there was absolutely nothing from your abstract?" Day then read the abstract aloud. Dolphin said he talked about the changing speed of light last year, and that was enough. Day would not accept that. He explained to the audience what Dolphin was supposed to talk about and why it is nonsense, and he distributed copies of his *OASIS* article on c-decay. Then an astronomer from the Royal Ontario Museum got on Dolphin for misrepresenting the Big Bang and entropy. When it was all over, the audience ignored Dolphin and gathered around Day and me to ask questions.

Had Gentry warned Dolphin we would be there? More cogently, if Dolphin is convinced he is right, why did he change his talk and completely avoid his announced subject? At first we were disappointed, but upon reflection, it is just as well that Dolphin retreated. In the future, we can demand to know why he refused to give his real lecture.

Rob and I asked several STAO officials why two creationists were on the program. The committee should have known about Dolphin after last year. It turned out, however, that this year's planning committee had different people than last year's. Gentry's acceptance was more interesting. According to Paul Barron, the planning committee got a call from the president of the Creation Science Association of Ontario (CSAO), who said, "I'm Alan Montgomery of the Workman's Compensation Board, and we would like to sponsor a speaker." After Gentry's abstract was accepted, Montgomery phoned back to

ask that CSAO be listed as sponsor on the published abstract. Barron felt deceived.

The likelihood of creationist booths at future conferences has been reduced substantially.

Although many at the conference (including some on the STAO Executive) were in sympathy with us, the STAO Executive as a whole was displeased with our public exposure of the creationist speakers. They were even less pleased with the creationists, and not just because they were deceived into putting Gentry on the program.

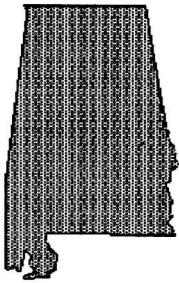
Exhibitors are an important part of the STAO conference, and universities, textbook publishers, and scientific equipment sellers rent display booths. Last year, CSAO had a double booth in the front row, nestled between legitimate science organizations. This year they had none. In their fall newsletter, CSAO claimed they had been refused a booth because they did not meet STAO standards of scientific integrity. Planning committee chairman Paul Barron told Rob Day that was not the case.

In fact, STAO raised booth rent from \$350 to \$650, and CSAO claimed the increased fee would "discriminate against small *religious* organizations (*italics added*)." CSAO therefore filed suit at the Supreme Court of Ontario seeking an injunction ordering STAO to give them a booth at the old price. The judge threw the case out on jurisdictional grounds, and CSAO then filed a suit with the Human Rights Commission (this might take five years to get to court).

Between the deception, the lawsuits, and the "scientific" content of the creationist presentations, the likelihood of creationist booths and lectures at future STAO conferences has been reduced substantially. The same can be said for the credibility of Gentry and Dolphin.

I see a change in direction in the battle against this pseudoscience; I think we are finally winning in the public forum. Creationists see it differently, of course. Though these setbacks may temporarily dampen their ardor, they will be back in force in the not-so-distant future.

We will be ready.



Science Text Adoptions in Alabama: Part II

Scott Brande

In part I of this article (*NCSE Reports* 9(6):5), I told how Haughton Publishing submitted its text, *Of Pandas and People*, for adoption in Alabama as a supplemental high school biology textbook. I consider this book a serious challenge to the integrity of public science education in Alabama because it falsely promotes "Intelligent Design" as a scientific concept. The Alabama Textbook Committee, which advises the Board of Education, reviewed *Pandas* and refused to consider it by a vote of 17-5. My last report ended before the 14 December meeting at which the board considered the committee's recommendations.

The 14 December meeting of the Alabama Board of Education convened with Governor Hunt presiding, a clue that something was going on. A second clue was the intense political squabbling over how much agenda time should be devoted to the textbook adoption business, a matter usually decided beforehand. The board *could* have dispatched this agenda item by simply voting to accept the committee's list of recommended texts. But this list did not include *Pandas*, and Haughton Publishing was appealing to the board to adopt the book anyway.

Governor Hunt asked those speaking about *Pandas* to decide among themselves how to allocate the 25 minutes allotted to each side. I had organized a small resistance force of five scientists, including John Schweinsberg, CC liaison for Alabama; David Sims, a physicist from Huntsville; James Lamb, the paleontologist at the Red Mountain Museum in Birmingham; and Ron Lewis, a paleontologist at Auburn University. We focused on the unscientific nature of "Intelligent Design" and the poor science in *Pandas*.

Haughton's Presentation

Haughton Publishing made an elaborate presentation. A Birmingham businessman presented petitions with over 11,800 signatures urging the board

to adopt supplementary materials presenting "Intelligent Design" as an alternative to evolution. (For several weeks, a Christian radio station in Tuscaloosa had urged people to sign the *Pandas* petition.) He recited the names of eminent supporters of *Pandas*—physicians from the University of Alabama—Birmingham medical faculty, business leaders, and a mayor. He also urged adoption based on the book's scientific validity and argued that its exclusion would be unfair.

The main speaker for *Pandas* was the Haughton's legal representative, Francis "Brother" Hare, Jr., a prominent Birmingham attorney. Hare charged that opponents had falsely painted *Pandas* as a creationist text, and that "Intelligent Design" does not compel belief in the supernatural. He then introduced two expert witnesses.

The first witness was Dr. Robert Kaita, a fusion physicist at Princeton University. Hare asked Kaita to identify the three major tenets of "scientific" creationism (a young earth, catastrophic events in earth history, and a belief in the supernatural) and asked whether these elements are present in *Pandas*. Kaita said they are not.

The second witness was Dr. Fred Sigworth, a molecular biochemist from Yale University. Sigworth called evolution a fact but said he distinguishes between microevolution and macroevolution. He doubts that macroevolutionary theory can adequately account for the development of the major groups of organisms. He said that, like evolution, "Intelligent Design" does a good job of explaining the data of biology and paleontology.

After several more witnesses and some discussion, board member Victor Poole moved to approve *Pandas* as a supplementary text. Before the motion was voted on, however, another board member asked for legal counsel. She was not sure the board could legally add books not recommended by the committee to the approved list. A Department of Education lawyer said that in his opinion the board lacked such authority, and Poole's motion failed. Instead, the board voted to return *Pandas* to the committee for further review. The committee was directed to

hold another public hearing on 8 January for the sole purpose of discussing *Pandas*.

In preparation for the January meeting, I again recruited Lamb and Schweinsberg; I found additional help from Bob Gastaldo, a paleobotanist from Auburn University, and Jim

Persistence, excellent press coverage, and a bit of luck were crucial to our success in exposing and publicizing Haughton's shenanigans.

Dobie, of Auburn's Zoology Department. We were well prepared to expose the invalid science in *Pandas*, but we were unprepared for the bizarre events that transpired.

The January hearing had barely begun when committee chairman Larry Newton was interrupted by Francis Hare, who asked for an opportunity to announce that Haughton was withdrawing *Pandas*. Newton replied that the committee was holding a public hearing at the direction of the Board of Education. Hare threatened to file a series of complaints, but Newton told him to wait his turn to speak.

John Schweinsberg spoke first, and he cleverly showed how *Pandas* retains vestiges of "scientific" creationism. After John's presentation, Newton called for Henry Skrabanek, president of Haughton Publishing, but there was no reply. He then called Francis Hare.

Silence shrouded the auditorium as Haughton's attorney strode to the podium. Hare said that Haughton Publishers had instructed him to withdraw *Pandas* for lack of due process; the public hearing did not conform to the protocol for such proceedings. He objected to the arbitrary order of the speakers, the lack of opening and closing arguments, and his inability to cross-examine witnesses. Hare also claimed overwhelming public support for *Pandas* as well as scientific support, and he characterized its opponents as intolerant.

Norris Anderson, director of Cornerstone Ministries and perhaps the strongest *Pandas* partisan on the committee, immediately moved to accept the with-

drawal and end the public hearing. His motion failed 15-4. When a motion to continue carried 15-3, Hare and his contingent stormed out of the auditorium, with media representatives in their wake.

The hearing continued. Speakers for *Pandas* included Jon Buell, Director of the Foundation for Thought and Ethics, Dr. Fred Sigworth of Yale University, and Dr. Charles Thaxton, "academic editor" (coauthor?) of *Pandas*. Opponents included my science contingent and former Congressman John Buchanan, Director of the People for the American Way.

Winning through Intimidation

After the public hearing, the committee reconvened in a smaller meeting room, where the public could listen but not participate. Before any action could be taken, Norris Anderson interrupted with an ominous statement. During lunch, he said, several attorneys advised him that the committee's legal jurisdiction was nullified by Haughton's withdrawal of *Pandas*. If they now voted against the book, Haughton would be injured, and each member would be corporately and personally liable for damages. Anderson said categorically that Haughton Publishing would sue them under the 1983 Civil Rights Act.

Haughton's threats to committee members are unprecedented (I believe) in the history of Alabama textbook adoptions. The ensuing discussion found committee members torn between their mandate from the board to evaluate *Pandas* on its merits and their fear of legal action. Many expressed disgust at their manipulation by Haughton, and some wondered aloud whether Haughton had planned this tactic in advance. (As Norris Anderson defended Haughton's position by citing specific sections of the legal code, this appeared to be the case.) Intimidated, the committee decided not to vote on the merits of *Pandas* and instead passed a resolution recognizing its withdrawal. This was a minor victory for Haughton, as their forced withdrawal in Alabama will damage their future efforts less than an outright rejection.

When the Board of Education met on 11 January, it noted the withdrawal of *Pandas*. As a last gasp, one member

again tried to enter a motion to adopt the book, but this tactic failed. The *Pandas* adoption fight in Alabama was finally over.

Three Decisive Factors

In contrast to the determined and well-organized campaign run by Haughton Publishing, the resistance forces quickly formulated responses as each new challenge arose. The success of our loose confederacy in nullifying overwhelming odds depended upon three factors.

First, Haughton promoted *Pandas* as a science book, but the perceptive people chosen to evaluate it applied the Duck Rule (if it looks, walks, and quacks like a duck, you ought to call it a duck). They recognized *Pandas* as a creationist book.

Second, Haughton made a big issue of public support. Unfortunately for them, this was not a criterion considered by the committee. Instead, committee members are instructed to consider a book's conformance to the state Course of Study and its academic merit. *Pandas* fails on both counts.

Finally, Haughton's undercover promotional campaign may have aroused ill-will in some committee members. Dogged persistence, excellent press coverage, and a bit of luck were crucial to our success in exposing and publicizing Haughton's shenanigans.

Our victory in Alabama may be of greater significance nationwide than we can judge at present, because Haughton Publishing has begun a long march across the nation into other states with state-wide adoption procedures. Our experiences should help the foot soldiers elsewhere who will have to fight the same battle. We now know enough about *Pandas* and its publisher's strategy to enable a faster and more effective response.

I commend the National Center for Science Education, and especially its executive director, Dr. Eugenie Scott, for providing critical information and support to us during these trying times.

At the conclusion of the textbook committee's discussion, one member asked when *Pandas* can be resubmitted. The answer was, the next time Alabama evaluates science texts — 1995.

See you then for another round!

BACC-Science and NCSE Help in California Textbook Controversy

The controversy over creation and evolution in the California Science Framework (see *NCSE Reports* 9(6):1) resulted in a victory for evolution education, because the Framework requires textbook publishers to include evolution as one of the organizing principles of science. On the other hand, it was not a complete victory because the religious right succeeded in having some important paragraphs critical of creationism eliminated, as well as a sentence stating that "like electricity and gravity, evolution is both a fact and a theory."

Members of the Bay Area Committee of Correspondence for Science (BACC-Science) participated in the important public hearing held by the Board of Education on October 25. Bill Bennetta made a particularly eloquent statement to the Board arguing that the "deplorable tragedy" of the 1985 textbook debacle (when Superintendent Honig rejected all the junior high school life science books for lack of coverage of evolution) should not be repeated. BACC advisor and NCSE board member Kevin Padian arrived cradling a yard-long dinosaur bone, which he reminded the board he had brought to the last textbook hearings five years before. He had used the bone then to illustrate that evolution was not just something that "some scientists believe," but that there is ample evidence for evolution. Padian quipped, "I hope I don't have to bring this back next year when we discuss what books to adopt."

Other BACC and/or NCSE people also testified. Elementary school teacher Wilma Russell was helpful in showing teacher support for the strong position of evolution in the Framework, and higher education was represented by professors Wayne Bartz and Lawrence Lerner. Also testifying were: John Taube, Daniel Sabsay, Earl Hautala, Jenny Oates-McKeighen, Dan Dugan, Eugenie Scott, and Liz Hughes.

As further evidence of the importance of BACC-Science in supporting

evolution in the Framework is a letter from Superintendent Honig addressed to NCSE president John R. Cole, excerpts of which follow:

Dear Dr. Cole,

Thank you for your recent letter regarding my role in the press for academic integrity in the new Science Framework. This was clearly a group effort, and the success was due, in large measure, to the efforts of the members of the Science Framework Committee, the Curriculum Commission, and the State Board of Education. These formal groups, along with many members from the Bay Area Committee of Correspondence, regularly supported a strong stance on the teaching of evolution in life and earth sciences. In particular, Kevin Padian, Larry Lerner, and Eugenie Scott took special care to provide me and my staff with the kind of information and perspective that helped us to develop a clear statement on the teaching of science

Bill Honig

Sillman vs. Gish: Round 3

Emmanuel Sillman

On October 21, 1989, I debated Duane Gish for the third time. Our first encounter on May 5, 1984 was at the same place, the Third Presbyterian Church in Uniontown, the heart of our southwestern Pennsylvania Bible Belt. Gish had a full three-day (Friday - Sunday) schedule in the area, speaking at various services. Our debate was sponsored by the Penn Highlands Teens for Christ and various local churches. This time the audience numbered about 150, perhaps half as many as last time.

Some attended at my invitation, including friends from the area and a faculty member from West Virginia University. (I had alerted faculty from three other area colleges and universities, but no one showed.) I also invited Dan E. Wonderly, an old-earth creationist who had never heard Gish before. Wonderly came to listen, ask a question, and talk with Gish afterward. He did not seem happy with what he heard.

At my insistence, we each were allotted an initial hour; I wanted my initial presentation all in one piece rather than split into two half-hour talks. Gish spoke first, seemingly repeating the talk I had heard

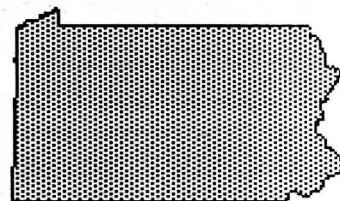
him give before word-for-word. He also showed the same slides, except for the cow-to-whale and young chimpanzee slides. I correctly anticipated that his main themes would be probability, the second law of thermodynamics, and the fossil record. He also challenged evolutionists to explain how the complete metamorphosis life cycle of the Monarch butterfly evolved.

I began by saying that although we both held Ph.D.s in science from equally prestigious universities, I was representing science, and he was delivering a religious message with a gloss of science jargon. I did not use slides, preferring instead to use posters produced by Francis Graham, who accompanied me. The posters were more effective for my purposes.

I explained in some detail why Gish's probability figures about the likelihood of protein molecules evolving were fantastic and wrong. I discussed the second law of thermodynamics and showed not only that it does not bar the process of evolution, but that life on earth has evolved as a consequence of the second law. I discussed the age of the earth, and I explained the history and methods of absolute dating. Here, I waved a copy of Wonderly's book (as Gish did Denton's book), and I gave Wonderly's essential message; that is, Christians need not fear that valid scientific evidence would erode their religious beliefs — and the earth *is* much older than 6,000-10,000 years. Graham thought audience interest peaked during this segment.

I concluded by quoting these remarks by Richard Feynmann (his final words on a 1983 Nova program):

You see, like all scientists, I can live with doubt and uncertainty and not knowing it all. I think it is much more interesting to live not knowing than to have answers which might be wrong. I have approximate answers and possible beliefs and different degrees of certainty about different things. But I am not absolutely sure of anything and there are many things I don't know anything about, such as whether it means anything to ask why we're here, and what that question might mean. I might think it out a little but if I can't figure it out, then I go on to something else. But I don't have to know an answer. I don't feel frightened by not knowing things, by being lost in a mysterious universe without having any purpose, which is the way it really is, so far as I can tell. It doesn't frighten me.



CURRENT CONTENTS

Bible-Science Newsletter, December 1989. Nancy Pearcey's "World View" section, "Echo of Evolution? The Revolution in Molecular Biology," is an uninformed regurgitation of molecular data and misinterpretation from Michael Denton and *Of Pandas and People*. Ironically, the data Pearcey presents as evidence against evolution powerfully supports the molecular clock and the neutral theory of molecular evolution.

Bible-Science Newsletter, January 1990. In the lead article, "When the Controversy Came Home," Phil Gerrish tells how he got into trouble for teaching creationism in an Idaho public school (see article p. 22). — In "Origins Is a Religious Issue!" Reverend Paul Bartz discusses (among other things) "agnostic theology." Bizarre. Next issue, he promises to "document evolutionist admissions that evolution is faith and not science." — The *Contrast* pull-out section is "The Ray Webster Case" by Jerry Bergman, who "misunderstands" the distinction between teaching creationism and teaching about creationism. Vintage Bergman.

Creation Research Society Quarterly, December 1989. "Are Human and Mammal Tracks Found Together with the Tracks of Dinosaurs in the Kayenta of Arizona? Part II: A Field Study of Quasihuman, Quasimammalian, and Dinosaur Ichnofossils Near Tuba City" by Paul O. Rosnau, Jeremy Auldane, George F. Howe, and William Waisgerber. With 22 pages of text, diagrams, tables, and photographs, the authors review undoubted footprints and other markings in bedrock near Tuba City, Arizona. They report their conclusions individually; three of the four find the evidence for human footprints among dinosaur prints good but not conclusive.

The Ark Today, January-February 1990. Lang gives Wendell Bird's *Origin of Species Revisited* a mixed review. He is obviously troubled by the intellectual dishonesty of "abrupt appearance," and he also claims that portraying science as neutral amounts to idolatry.

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ICR ...

nominated by ICR also signed, though with some reservations. The report noted, "[Dr. Eimers] did not agree with the estimation of the severity of those problems as they are communicated in this report, nor did he concur with many of the conclusions drawn." Referring to the "positive attitude" of ICR in making "improvements" recommended by the 1988 committee, the report says, "It was the conclusion of this member that at least three of the four programs, (namely, geology, physics [renamed], and science education) were of sufficient quality to meet the minimum standards of comparability and that the problems discovered were not severe enough to constitute sufficient grounds for denial of reapproval by the Superintendent."

What Happens Now?

ICR has been notified of the committee's negative evaluation. A special review committee of the Council for Private Postsecondary Educational Institutions will meet in February to review the report, and in mid-March, the full committee will meet to discuss its decision. If the Council agrees with the recommendation of the visitation committee, they will recommend to Superintendent Honig that ICR not be approved. ICR's next step would be to appeal to the Office of Administrative Hearings, which is under the auspices of the California Attorney General, rather than the State Board of Education. In the past, the AG's office hasn't strenuously opposed diploma mills; as the current AG is a candidate for governor, it is not clear whether his office would vigorously defend the case. Should the AG's office also uphold the rejection, ICR could press its claim in court.

ICR may be allowed to testify at the Council meeting in March. We'll keep you posted. One thing we *did* hear, however, was that an ICR spokesman told a state official that ICR is *not* planning to leave California (for Tennessee, for example), as had been rumored at the National Creation Conference (see *NCSE Reports* 9(5)).

NEWS

The ICR Approval Story in Context

In California, unaccredited institutions like the Institute for Creation Research must periodically apply for approval to grant college degrees, and ICR's application for reapproval has been in progress for over two years (see *NCSE Reports* 9(1), 9(4):21.) In 1988, the first committee of scientists to evaluate the ICR voted 3-2 in favor of approval, with the two dissenters filing comprehensive and scathingly critical minority reports. Two of the "pro" votes were creationists and long-time personal friends of Henry Morris. The third switched his vote, and Superintendent Honig accepted the committee's recommendation to disapprove ICR's graduate programs. Grounds for rejection centered on numerous shortcomings of the program plus the fact that ICR claimed to grant degrees in science when they were actually teaching creationism. Honig offered to let the ICR grant degrees in *creation* science, or theology, but the ICR refused.

ICR's legal counsel negotiated a second evaluation, based on ICR's claim to be able to rid its courses of pseudoscience, increase the number and quality of staff, and generally revamp its program. As part of the deal, ICR agreed to a second visitation team.

Agreeing to a second review and visitation may have been ICR's downfall. The 1988 vote flip-flop and Honig's "interference" raised questions of due process, and ICR might well have had a stronger court case based on the earlier review. As discussed in *NCSE Reports* 9(4):21, the 1988 review addressed not only institutional failings (poor courses, inadequate library and laboratories, and so forth) but also the creationist nature of the institution. A lawsuit over the decision would necessarily require a judge to make decisions on the scientific merits of creationism. This is not something proevolutionists like to see, as judges are rarely trained scientists. Even as well-educated an individual as Supreme Court Justice Scalia has flirted with acceptance of creationism as science.

The 1989 review virtually ignored creationism as an element of the ICR

program, and focused on the poor training students got, the lack of concordance between the syllabus and the lectures, the hopelessly unscientific masters theses produced, and other pedagogical points. It would be very difficult for the ICR to take this report to court and claim persecution based on its creationist orientation.

On the other hand, a trial on the merits of creation "science" is precisely what the ICR attorney, Wendell Bird, wants. It is no coincidence that Bird is no longer involved in the negotiations with the State Department of Education; ICR's new lawyer is a nuts-and-bolts type who specializes in getting unaccredited institutions through the hoops of the Sacramento bureaucracy.

What of ICR's future? Although other creationist-oriented institutions grant degrees (e.g., Falwell's Liberty University), ICR is the only *specifically creationist* institution that grants advanced degrees. While many organizations promote creationism to the public, ICR is the flagship creationist institution. Its stated mission is not just the dissemination of "scientific" creationism, but research in creation "science," and production as well of *teachers and creationist scientists*. Pitiful as they are, their masters programs are a source of pride to them, and now they will be lost. The rejection is devastating from a publicity standpoint.

The loss of the graduate program will be a psychological blow but we can expect ICR to continue promoting creationism as usual. They still have their "research" and propaganda functions. Their press, Master Books, has scores of titles, and their list of videotapes, slide sets and other materials for home and school are seemingly growing daily.

We need not weep for "poor" ICR, regardless of their propaganda. A newspaper article quoted them as claiming an annual budget of \$1.5 million (many times NCSE's budget). If the state of California eventually rejects their graduate program, it will offer them a wonderful opportunity to play the underdog in fund-raising letters to their supporters.

Dannemeyer Dumps Creationism!

California Rep. William E. Dannemeyer's "Community Life" constitutional amendment (see *NCSE Reports* 9(3):1; 9(4):19; 9(6):20) has undergone major alterations. He has dropped all references to the "Judeo-Christian Ethic," the Ten Commandments, and creationism! The bill now proposes a "straight" prayer-in-school amendment, comparable to those proposed during the Reagan administration.

He is still attempting, as we reported in our last issue, to pressure four or more Democrats to vote with him to get the measure out of committee on a discharge petition.

Excerpts from the Committee Report on ICR

For more background, see the lead story, *ICR's Graduate Programs Blasted...*



The visiting committee examined syllabi and final examinations, audited courses, and interviewed students and professors. For a complete copy of the 48-page document, send \$3.50 and a SASE with \$1.05 postage, or \$5.00 to NCSE, P.O. Box 9477, Berkeley, CA 94709-0477. The following are some of the committee's comments with our subheads indicating the area of the report the extract comes from:

Academic Achievement

"When visiting team members spoke with this student about his plans following completion of the M.S., the student speculated that he might remain with ICR as their librarian for a while, and after that, he would see. When he was asked whether he might consider continuing on elsewhere for a Ph.D., he commented, 'Who would take me with *this* degree?'"

Astro/Geophysics 504 Theoretical Physics IV — Quantum Mechanics

"This course has never been offered before. The two professors, now retired, who set up the Astro/Geophysics program, and who have been replaced by the current faculty members, held objections to the entire fabric of physics since 1895. Because of this, ICR did not offer a course in quantum mechanics or any other aspect of modern physics The faculty member responsible for the course explained that the level had been planned deliberately to be significantly lower than normal for such courses. He pointed out that a large proportion of the ICR students are graduates of 'Christian colleges' that share the aversion to twentieth-century physics of his faculty predecessors at ICR, and therefore do not offer courses in modern physics."

Biology 505 Human Anatomy and Comparative Mammalian Anatomy Lab

"In the syllabus, four out of twelve days of actual lectures were devoted to vestigial organs in man, a subject of only minor anatomical importance Despite the title of the course, comparative anatomy was not mentioned in the examination, nor were vestigial organs. ... This course shows a remarkable degree of discordance between what is claimed to be presented and what is actually presented."

Biology 504 Biosystematics

"The examination was so sketchy and brief that it might have been better used as a weekly quiz. Questions were vague and poorly worded to the point of being unanswerable. For example:

'How would you critique the use of embryonic recapitalization [sic] in systematics?' This instructor presumably meant 'recapitulation'. Even so, this is so broad a question that a student could not possibly do brief justice to it. It appeared to some members of the visiting team that students might be expected only to recite back a particular answer that the instructor had supplied in advance."

The faculty and its professional scientific output

"The pattern is clear. Although some of the faculty profess their intention to maintain research activity, no member of the resident faculty of the Institute for Creation Research has continued an active and published research program since arrival at the ICR. The Institute for Creation Research can therefore not be considered to be a scientific research institution".

Webster Watch

Ray Webster, a junior-high school teacher, is suing his superintendent in the northern Illinois Federal District court for the "right" to teach creationism. As we discussed in our last issue (*NCSE Reports* 9(6): 8), the case is currently on appeal. We have just learned that oral arguments are scheduled for late in February. We'll have another report in our next issue.

RESOURCES

Of Pandas and People

Dean Kenyon and Percival Davis, edited by Charles Thaxton (Dallas: Haughton Publishing, 1989), \$13.95.

Reviewed by Eugenie C. Scott,
Executive Director of NCSE

Of Pandas and People (hereafter *Pandas*) exemplifies the new creationism, which conceals its theological underpinnings better than the old Institute for Creation Research variety. Here, the Creator is cloaked in the euphemism "intelligent design." Like traditional creationist works, this book is laden with misstatements, misunderstandings, or incomplete descriptions of evolution, and the errors and omissions always favor "intelligent design." This review will describe only a few of its errors.

The Argument from Design is dressed up in information theory and passed off as science.

As an anthropologist, I turned first to the section on the hominid fossil record. The following examples are from pp. 109-112:

- The diagram on p. 109 purportedly showing the fossil record of primates is incompetent. Old World monkeys are not older than apes (as drawn), pongids include chimpanzees (shown as separate), and the fossil forms *Pliopithecus*, *Australopithecus*, and *Oreopithecus* have not (as depicted) continued until present. The "chimpanzee" at the top of the chart looks like a gibbon. The chart is drawn without transitional forms, but that doesn't mean there aren't any.
- On p. 111, *A. africanus* is drawn with a chimp thorax, a human pelvis, and a cranium from a K-Mart Halloween display. It looks like a tracing from a physical anthropology text, with much lost in translation.
- On p. 112, "primate" and "human being" are juxtaposed as if humans

were not primates. The text falsely implies that *H. habilis* has no ancestors and that "human" fossils are found "in same area" as *H. habilis*. Archaic *Homo* not is hypothetical (several remains are attributed to this taxon), and it did not have an ape-like skull. The authors' attribution of the sloping forehead of *H. erectus* to nutritional deficiency is lunatic. (The *H. erectus* morphology occurs in Asia, Europe, and Africa. Were there calcium, vitamin D, and other deficiencies in all these areas?) Only creationists consider possible relict *H. erectus* populations in Australia to be "races" of *H. sapiens*.

These examples from three pages show why it is impossible to cover the whole book in a review. Here are a few more chips from the tip of the iceberg.

Origin of Life

Evolutionary theory is not tied to origin-of-life theory, as the book says (p. 2), nor to random or chance processes. Evolutionary theory may include origin of life hypotheses, but much of it is independent. In saying "most mutations are harmful," the authors reveal a serious misunderstanding of modern genetics. Most mutations are neutral and have no effect whatever on the organism. The authors ignore the neutral theory of evolution, which explains much that classical Darwinism doesn't.

NeoDarwinism

Most of the evolutionary biology in *Pandas* is 25 years out of date. The authors expect neo-Darwinism to explain everything, but they can't even get this material entirely correct. For example, they confuse characteristics of reproductive isolation with those of speciation. They make the Design-inspired assumption that natural selection must result in perfection and even overspecialization. They misunderstand variation's role in natural selection and state that populations adjusting to an ecological niche become less variable. (That is only one possible outcome, albeit one that supports their position.) And they incorrectly imply that macroevolution depends upon microevolution.

Homology

Homology theory has many interesting problems, but *Pandas* does not discuss them. Indeed, the homology discussion is so misinformed it would take another book to sort it out. Because they don't understand homology, the authors accuse evolutionists of "guesswork" and "extrapolation." In fact, evolutionists consider comparative anatomy, ontogeny, and the fossil record, none of which topics is treated competently in this book.

Fossils

The treatment of the fossil record is rife with egregious misunderstandings. No one with any competence in paleontology would claim that no transitional forms exist. Transitions exist between orders like Mammals and Reptiles, between families, and even within genera. (Write NCSE's Resource Center for details.) Punctuated equilibrium is presented more or less correctly in the overview but botched in chapter 3. The authors agree that geographic speciation occurs (they discuss it at length), but they fail to relate it to punctuated equilibrium, which is essentially geographic speciation extended through time as well as space.

Biochemistry

The biochemistry chapter is similarly hopeless. The authors acknowledge taking much of their material from Michael Denton's *Evolution: A Theory in Crisis*, so previous criticisms of Denton's biochemistry are directly relevant. Even the diagrams are similar (compare p. 147 of *Pandas* with p. 282 of Denton). The molecular data *do* show the nested, hierarchical relationships predicted by evolution (see the diagrams — derived from Denton — in Thwaites' review, *NCSE Reports* 9(4): 14). Only creationists expect biochemical data to show the genealogical relationships on p. 143ff. Bacterial cytochrome C is indeed equally distant from yeast and mammal cytochrome C, which is precisely what evolution predicts. The common ancestor of yeast, carp, rattlesnakes, and humans diver-

ged from bacteria long ago, so they all have been diverging from bacteria an equally long time. The accumulated genetic difference between them and bacteria is therefore about the same.

Molecules from organisms with more recent common ancestors (like those from humans and other creatures in table 6-1) show different relationships. Humans are more similar to monkeys than to screw worms because they shared a common ancestor with monkeys more recently than with screw worms. They are more similar to screw worms than to mung beans because they shared a common ancestor with screw worms more recently than with mung beans. Evolutionists view these relationships as one of branching clades. Molecular data clearly show that evolution has occurred.

Most of the evolutionary biology in Of Pandas and People is 25 years out of date.

Living forms are not representatives of ancestors, but the authors apparently don't understand this. In their "Great Chain of Being" view, "less advanced" living forms are ancestral to "more advanced" living forms (p. 144). The authors profess amazement because living amphibians are not molecularly intermediate between fish and mammals. Evolutionists are not amazed. Some *fossil* amphibians are intermediate between fish and mammals. Living ones are not. Once again, we find profound misunderstanding of evolutionary theory, molecular genetics, molecular evolution, and the molecular clock.

Pedagogy

A textbook should be a scholarly source of information, but here also *Of Pandas and People* fails. Where did these ideas come from? Where are the references? An occasional superscript number suggests a footnote, but (except for the last section) no references are listed for the footnotes! Most identifiable references are to creationist works or obscure works given little credence by mainstream scientists. Where

there are quotations from legitimate scientific works, many seem to be copied from creationist publications rather than quoted from original sources (they show the same inaccuracies.) Denton has Darwin and Wallace jointly presenting their paper to the Linnaean Society in 1858, and *Pandas* says both men "jointly presented their natural selection theory of evolution in 1859," the year of the publication of *On the Origin of Species*. Both are wrong. On p. 106 is one of Duane Gish's favorite passages, a quote from E. J. H. Corner, and it omits (with no ellipsis) exactly the same words Gish left out. Is this the sort of scholarship to which students should be exposed?

Selling the Supernatural

The book attempts to convince the student (and teacher) that a basically supernatural view can be made scientific through word manipulation and conflation with scientific concepts. Thus, the Argument from Design is dressed up in information theory and passed off as science. This selling of the supernatural is pertinent to understanding why this book is not science, but pseudoscience.

In early 1987, the Foundation for Thought and Ethics (FTE), with which Thaxton is affiliated, wrote to potential textbook publishers about *Pandas*. In the letter, FTE wrote, "[T]he book will not be subject to the major criticism of creation, that the supernatural lies outside of science, because its central statement is that scientific evidence points to an intelligent cause, but that science is silent as to whether that intelligence is within or beyond the material universe. So the book is not appealing to the supernatural." In an appendix by Thaxton, under the heading Philosophy/Religion, "natural" is contrasted with "supernatural" as adjectives describing cause (p. 161). Under Science, he opposes "natural" with "intelligent". The latter, however, is a false dichotomy. To be dealt with scientifically, "intelligence" must also be natural, because *all* science is natural. Thaxton's appeal to the Search for Extra Terrestrial Intelligence (SETI) is fallacious. SETI is indeed a scientific

project; it seeks *natural* intelligence. Any theory with a supernatural foundation is not scientific, and to say that "intelligent cause" is an antonym of "natural" but is not "supernatural" is pure sophistry.

Nowhere in this book is there any indication that the "Intelligent Designer" is anything other than the God of Genesis. Beneath the veneer of sophistry and euphemism, "intelligent design" is plain old scientific creationism. While *Pandas* consciously avoids that term, anyone familiar with creationist literature will immediately recognize the logic and arguments — mutation is bad; evolution depends on chance; creationism and evolution are parallel and equally well-supported views; numerological considerations prohibit evolution; if we don't understand, "there *must* be a designer;" and so forth. Despite pious protestations about the student's "right" to receive all the information, *Pandas* only presents criticisms of evolution, *not* of "intelligent design." But the Argument from Design has been around for 200 years, and scientists have rejected it for good reason. Stephen Jay Gould alone has published numerous papers on "imperfectly designed" creatures and structures of the like that even in Thomas Paley's day made thoughtful people reject the Divine Watchmaker for both theological and scientific reasons. *Pandas* never hints that "intelligent design" is an intellectually discredited idea that has *never* been science. The universe is indeed comprehensible, as the authors observe, but it is not valid to equate the *intelligibility* of the universe with *intelligent cause*. (I thank Delos McKown for pointing this out to me.)

In sum, *Pandas* is worse than I anticipated. I expected something more scholarly, for the principal authors have done better elsewhere. But this book is riddled with egregious errors of fact and profound misunderstandings of theory. Again and again, the authors ignore the scholarly consensus and present instead a *pot pourri* of half-truths, untruths, and nonsense.

Of *Pandas* and People is without scientific or pedagogical merit, and it has no place in the science classroom.

The Hominid Gang: Behind the Scenes in the Search for Human Origins

Delta Willis. New York: Viking Press (1989). \$21.95

Reviewed by John R. Cole

Cutting through the clutter of claims in human paleontology, Delta Willis delivers an up-to-date summary of what we knew about human evolution as of 1989 by letting many of the leading theorists, fossil hunters, and other researchers speak for themselves. The result is an outstanding book about how science and scientists work, not just what they have found. The latter comes naturally as part of the more interesting story.

The "Hominid Gang" is the name of Richard Leakey's fossil hunting crew in Kenya. That is indeed where the book begins and spends much time, but readers are taken to museums, labs, and classrooms around the world to follow up on various things overheard in Kenyan camps. The focus is on fossil evidence, but the "molecular clock" and "mitochondrial Eve" are presented lucidly and thoroughly, despite Leakey's jaundiced view of them. Like a proverbial fly on the wall, Willis reports on conversations among famous and less well-known researchers on various sides of argument — Mary Leakey, Kamoya Kimeu, Frank Brown, Stephen Jay Gould, Niles Eldredge, Alan Walker, Vince Sarich, Allan Wilson, Morris Goodman, Glynn Isaac, Jane Goodall, Kay Behrensmeyer, Jon Marks, Charles Sibley, Don Johanson, Tim White, Shirley Strum, and many others. Egos, personalities, and disagreements show clearly, but scientific enthusiasm, caution, tedium, and exhilarating fun also show through. The result is an empathetic portrait of the participants in the author's seven-year trek through millions of years.

Willis became fascinated with the topic of human evolution almost by accident, and she takes her readers along for the ride. She shows how the subject came alive for her as she talked

with researchers and listened in on their arguments, and she relays her enthusiasm wonderfully in terms designed for a nonspecialist. Disagreements and debates are recorded and explored, not for their gossip value, but to demonstrate vividly the dynamic nature of research. She spent the most time with Richard Leakey and his co-workers, but her portrayal of the "Johanson side" of the famous argument between the two men is relatively thorough and fair.

Neither side is denounced or viewed with rose-colored glasses. More importantly, the characters in her tale are seldom allowed to be Final Authorities — when Richard Leakey makes a pronouncement, she typically quotes Maeve Leakey's or Gould's or Johanson's misgivings, for example. Still, Richard Leakey the organizer, politician, and explorer is the book's hero, if there is one, and some people will view this book as a sort of nonpolemical reply to Johanson's *Lucy*. It closes with Leakey's reappointment as museum director after his dramatic 1989 resignation forced his government to deal with corruption in its wildlife protection efforts, a truly courageous, dangerous move that could have halted his life's work — and that of the Hominid Gang. The "Leakey Line" on human evolution (that the genus *Homo* appears in the fossil record for millions of years with no clear origin in common with other hominids and that major categories such as *erectus*, *neanderthal*, and *sapiens* might just be transitions within one evolutionary event) is shown to be very debatable — and challenged by members of his own camp, not just outsiders.

Gould's introduction accurately compares Willis's work with John McPhee's books on geology. I might add a comparison with Calvin Trillin's skill at getting inside the heads of very diverse informants. Willis covers much the same ground as last year's *Bones of Contention* by Roger Lewin, but she is less judgmental of "good guys versus bad guys," and her tone more intentionally measured, "on the other hand" journalism. Willis makes a fascinating case for why everyone should find human paleontology of interest, even though they do not intend to be

paleontologists when they grow up. (Indeed, the book might help sway some to switch fields in that direction.) The rest of the readers at least get to share in the author's adventurous quest in this "prequel" to Alex Haley's *Roots*.

The book is not about creationism, but it frequently refers to it as an example of a stultifying antiscientific prejudice, a danger and artificial limit to human understanding, and so forth. She quotes the eloquent Kamoya Kimeu's response to how his (Kamba) people reconcile their creationist tradition with his life's work: "We can see the evidence ourselves." Besides the telling points it scores for evolution by simply presenting the evidence very readably, the book also notes and counters details such as the odd Nicholas Wade *New York Times* quote reviewing the 1984 "Ancestors" exhibit at the American Museum of Natural History to the effect that all the fossils known would fit on one billiard table. She shows clearly that the evidence would fit better on a baseball field than a pool table, with hundreds of individual ape and human fossils in the Nairobi Museum's "Hominid Vault" alone.

Because the book is written expressly as a guided tour of the field for and by a nonspecialist, readers should not expect everything to follow professional "rules". Constant use of the popular term "missing link," however, even for specimens that are on the table in front of her, seems awkward. The writing is excellent, but it requires some adaptation by readers expecting a textbook. It is impressionistic and nonlinear, leaping freely among locations and times, juxtaposing related but noncontemporaneous taped notes and conversations. A Leakey field interview may turn into a Utah student union cafeteria conversation with Frank Brown making a point about geology and then to a one-page summary of Kenyan history portrayed as a movie synopsis with Louis Leakey and Jomo Kenyatta as the lead characters. It makes sense, but it is not quite what they taught in either *Journalism or Anthropology 101*.

Some of the color photos are nondescript and probably add unnecessarily to the book's price.

Available at 20% off through NCSE. See centerfold.

Articles of Note

Simons, Elwyn L., "Human Origins." *Science* 245: 1343-1350, 22 December 1989. An excellent, short state-of-the-science survey article summarizing what is known about the topic. The bibliography is extensive, although written in *Science's* frustratingly abbreviated form. Simons is one of our foremost primatologists.

Massey, Walter E., "Science Education in the United States: What the Scientific Community Can Do." *Science* 245:915-921, 1 September 1989. Scientists are urged strongly to get more involved with schools.

Cain, Joseph Allen, "Creationism and Mammal Origins." *Journal of Geological Education* 36:94-105, 1988. Demonstrates clearly that mammals did not appear abruptly in the fossil record, and therefore "abrupt-appearance models" as a supposedly scientific pseudonym for creationism is not justified.

Badash, Lawrence, "The Age-of-the Earth Debate." *Scientific American*, August 1989, pp. 90-96. How understanding has evolved from Archbishop Ussher's 6000 years to today's 4.5 billion year figure.

Zimmerman, Michael, "Newspaper Editors and the Creation-Evolution Controversy." *Skeptical Inquirer* 14, Winter 1990: 182-195. Results of a survey of editors' understanding and attitudes by the Ohio CC Liaison and Oberlin University biologist.

Gabler, Mel and Norma, "Divide atque Impera." T-710 from the Mel Gablers, PO Box 7518, Longview, TX 75607-7518. Strategy advice about how to disguise creationism as "evidence for and against evolution" in public schools by creationism's most diligent propagandists in the textbook wars.

Waldrop, M., "Did Life Really Start Out in an RNA World?" *Science* 246: 1248-49, 8 December 1989. Some are asking, "Where did the RNA come from?"

Noah's Ark Found

*Reprinted from the New York World,
August 13, 1883*

GREAT SCIENTIFIC FIND —

Considerable competition has recently been shown by the discoverers of ancient manuscripts and the finders of ancient relics. The latter has suddenly come to the front by the discovery of Noah's Ark in that part of the Armenian plateau still known as Mount Ararat.

The find was made by a party of Russian engineers who were surveying a glacier. An extraordinary spell of hot weather had melted away a great portion of the Araxes glacier, and they were surprised to see sticking out of the ice what at first appeared to be the rude facade of an ancient building. On closer examination it was found to be composed of longitudinal layers of gopher wood, supported by immense frames, still in a remarkable state of preservation.

Assistance having been summoned from Nakhchevan, the work of uncovering the find commenced under the most extraordinary difficulties, and in one week's time the indefatigable explorers had uncovered what they claimed to be Noah's Ark, as it bore indisputable evidence of having been used as a boat.

At this point, archaeology could afford to rest at any ordinary period of the world and we should expect the luckiest finders to form a syndicate and open a bazaar for the sale of relics.

But in our day antiquarian history takes another turn. It isn't looking for merchandise as much as for testimony. We must not forget that the planting of the Cardiff Giant was not so much to make money as to establish the missing link.

The Noah's Ark syndicate are only following the tactics of the antiquary who recently offered to sell an original manuscript of the Mosaic law signed by Moses to the British Museum.

They are trying to correct the record with facts.

With these principles in view, the reader must not be surprised to learn by the latest dispatches from our representative, Mr. Benjamin — who is not going to Persia for nothing — that the engineers have broken through the third compartment of the ark, and in the true

spirit of the age have discovered the original logbook kept by Noah and his sons.

Startling as this announcement is, it is backed up by documents, which must stand for what they are worth without any comment of ours. Philology, ethnology, and archaeology must fight it out for themselves. A newspaper can only narrate the occurrence.

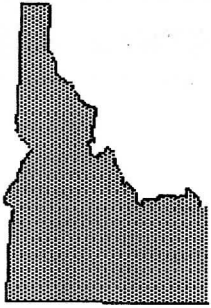
Editor's Note

Articles about the finding of Noah's Ark had appeared on August 10, 1883 in the Chicago Tribune and the New York Herald. Presumably, they were picked up by "exchanges" and repeated in newspapers all over the country. One need not be a student of 19th century newspaper hoaxes to recognize that from first sentence to last this writer had tongue firmly in cheek. Like Mark Twain's "Petrified Man" and "Dutch Nick Massacre" hoaxes, the piece is a multilevel commentary on human folly. As usual, some people miss the point. Violet Cummings reprinted the above article in Has Anyone Really Seen Noah's Ark? as evidence that the Ark was discovered in 1883. Surprisingly, she did not speculate on what has since happened to Noah's logbook.

Official Mormon Statement on Evolution?

Is the official Church of Jesus Christ of Latter-Day Saints' policy on evolution to oppose it? Mormons have opposed evolution in many parts of the country, and many Mormons believe anti-evolutionism is official church policy. NCSE member Dr. Robert Dietz has sent us an interesting letter written by the former Mormon Prophet, David O. McKay, in 1957. (The Prophet is the chief spokesman for the Mormons, and is thought to receive direct revelations from God. The Prophet's pronouncements, therefore, are quite significant for Mormon theology.) This letter, originally written to Professor William Lee Stokes, of Salt Lake City, UT, states, "On the subject of organic evolution the Church has officially taken no position." May we assume, then, that Mormons are free to vary on this issue? Does anyone have more recent information?

KEEPING TABS



An Idaho Creationist Speaks Out

The lead article in the January 1990 *Bible-Science Newsletter (BSN)* is "When the Controversy Came Home" by Phil Gerrish, a 7th grade math and science teacher at O'Leary Junior High School in Twin Falls, Idaho. The controversy that came home arose over Gerrish's teaching creationism in a public school (see *NCSE Reports* 8(4):1), and it was featured briefly on the 1989 Nova program "Of Darwin and Dinosaurs." Because most *NCSE Reports* readers rarely see *BSN*, we summarize Gerrish's story here.

Phil Gerrish, who has a degree in fish and wildlife management, began his junior high teaching career in Jerome, Idaho in the mid-1970s, and he taught in Jerome for two years. Already then he was teaching creationism and concerned that it would draw attention to him. It did. On the day he covered creation and evolution, the superintendent and the entire school board walked into his classroom unannounced to monitor the class. Frightened, he tried to hurry past the Bible verses already displayed on an overhead, but when a student insisted, he read them all. The next day, the superintendent told him the board thought he did a great job.

In the years that followed, Gerrish apparently continued to teach creationism to public school students, but he eliminated the Bible readings and changed his methods in other ways. Eventually, his classes included two ICR film strips, "Evolution and Creation ... Two Scientific Models" and "Design in Nature — Probable or Improbable?" All apparently went smoothly until December 1987, when he was visited by Stephen Hartgen, editor of the local paper. Hartgen's daughter was in Gerrish's 7th grade life science class, and Hartgen complained because Gerrish was teaching her creationism. Gerrish explained his scientific rationale and the Two-Model approach while Hartgen took copious notes.

Hartgen complained to the district, motivated (Gerrish suggests) by "the powers of darkness." Gerrish and his

wife wrote a point-by-point response to the complaint. He also contacted creationist attorneys Wendell Bird and John Eidsmoe, who lent moral support and wrote legal opinions for the school board. Gerrish expected the assistant superintendent, a Christian and a Lutheran, to support him, but the man told him he would probably lose, exposing "his bias on the issue."

The case dragged on for some months. Then, after a brief hearing, a study committee decided to recommend that the board rule against creationism. Gerrish rallied his supporters to pack the board meeting, and they managed to get the ruling against him tabled. The administration then tried to put together a district policy on "origins." Meanwhile, Gerrish tried to "better educate the community on the origins issue." To this end, he arranged for John Eidsmoe to speak in Twin Falls. Eidsmoe offered free consultation to the school board, and Gerrish was puzzled when they declined this offer, because some of the board members were Christians. He wrote, "It was becoming increasingly evident that the words 'Christian' and 'creationist' were not necessarily synonymous."

Eventually, Twin Falls School District #411 adopted a new policy that supported teaching alternative theories, as long as they didn't "promote the tenet(s) of a religion or religious group." The superintendent, however, said that creationism was a religious tenet. In the fall of 1988, the principal came to observe Gerrish's "origins" unit for 11 days, but Gerrish had made more adjustments; he now taught "intelligent design" rather than creationism.

When he was approached by Tom Lucas, producer of the Nova program *God, Darwin, and the Dinosaurs*, Gerrish was skeptical. He expected Lucas to treat him dishonestly, but he thought a Nova show (unlike ICR materials) would be usable in his classes. He found the Nova crew very insightful in their questions, but when they tried to probe his religious views, he put them off. Gerrish was disappointed with the resulting program, but at least it gave him an opportunity to introduce the controversy to his students.

In June 1989, the school board

finally adopted the "Origins of Life" policy previously tabled. Gerrish writes that he is attempting to work within the policy, though "intelligent design" seems to him a compromise. He now limits himself to secular sources such as Denton and McBeth [sic]. He has received considerable help from Robert Kofahl at the Creation-Science Research Center and John Buell at the Foundation for Thought and Ethics. Buell sent him *Of Pandas and People*, which he uses and recommends to all science teachers.

Nowhere in his report does Gerrish offer detailed scientific arguments, but he provides clues to his level of understanding. For example, he cannot distinguish between ICR material and science. He thinks Michael Denton and Norman McBeth [sic] are "respected scientists who are evolutionists." (Norman MacBeth is a lawyer. For the respect due Denton's views on evolution, see Thwaites's review of *Evolution: A Theory in Crisis*, NCSE Reports 9(4):14. Neither Denton nor MacBeth is an evolutionist by anything but creationist standards.) In March 1988, in the middle of the controversy, the Reverend Dennis Petersen brought his four-session "Unlocking the Mysteries of Creation" seminar to Twin Falls. Gerrish wrote of Petersen's presentations, "the accuracy of the information I had been presenting in class was underscored." I suspect that is truer than he knows.

The Reverend Mr. Petersen gave a presentation at the 1985 National Creation Conference in Cleveland, and it was pathetic, even by Bible-science standards. For example, Petersen advocated a neo-Velikovskian scenario of planetary ping pong. Velikovsky claimed tremendous electrical discharges occurred between the earth and Venus during their alleged close encounters. Petersen told the audience that fossilization, rather than being a slow process, may be caused by electrical discharges. As evidence, he showed a slide of "tree roots" petrified by a lightning bolt. He neglected to explain how lightning could transmute cellulose into stone, but Bible-science rarely gets bogged down in such trivia. Indeed, Petersen's petrified tree roots looked remarkably like fulgurites,

root-like structures sometimes formed when lightning strikes sandy soil.

Gerrish seems proud of having sneaked his religion into the schools for several years, proud that he once got by with reading the Bible in his classes. Playing to his BSN audience, he permeated his article with religious references and appeals. Nothing could be plainer than this blast at noncreationist Christians:

Theistic evolutionists (those who believe in some aspects of the Word but also in the process of gradual change) offered the most resistance to my cause. I have struggled to understand those who dare to put *men* of science above the *Lord* of science. Surely the Creator knows more than the creation! Yet, "They chose to believe a lie." (Rom. 1:25).

When the Nova crew was around, however, Gerrish was careful to avoid stating his religious views. Then, he wanted to talk about *science*.

In short, Gerrish reveals himself as a self-absorbed fanatic. About the only self-doubts he expresses are fears of punishment and doubts about his strategy. The possibility that he may be wrong is not addressed. He writes, "I know from my own past that truth will always win when the seeker of truth is honest; especially when that truth is viewed next to a lie." Charles Darwin would have agreed, but it never occurs to Gerrish that evolution's triumph over creationism may have been a victory of truth over mythology.

Ark Update

Bible-Science Newsletter, December 1989. The lead article, "Noah's Ark May Be Found," by Frank Vosler, updates the November issue's short lead story about the September 1989 discovery of the Ark. High adventure on and above Ararat with Bob Garbe, Chuck Aaron, and (later) John Morris. Accompanying articles are more cautious about whether the Ark has actually been found.

The Ark Today, January-February 1990. In "Recent Sightings of Noah's Ark (?) A Rock Formation?" editor Reverend Walter Lang reviews recent events in Turkey. A geologist who saw the latest Ark close-up from a helicopter told Lang that it "definitely is a rock formation."

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Robert J. Schadewald
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