

Creation Research Society but also signed a similar statement as a condition of employment at The King's College. He also made Friar admit that a considerable amount had happened in the world of biology since 1929 and 1930 and even since 1953 that impinged on evolutionary theory. The books that Friar had referred to were therefore irrelevant.

During his testimony Friar had propounded his "limited change model." In other words, a small degree of evolutionary change is possible, but this is within the limits of "the originally created kinds." ("Kinds," incidentally, is a term that appears in Genesis, in creationist literature, and in Act 590 but not in the scientific literature.) Ennis therefore directed part of his cross-examination to the question of kinds.

Q. How many originally created kinds were there?

A. Let's say 10,000 plus or minus a few thousand.

Q. Some creationists believe kinds to be synonymous with species, some with genera, some with family and some with order, don't they?

A. (Friar began a long dissembling answer which Ennis cut short by repeating the question.)

A. The scientists with whom I am working . . . well. . . . It tends more toward the family. But it may go to order in some cases.

Q. You have been studying turtles for many years, haven't you?

A. Yes.

Q. Is a turtle an originally created kind?

A. I'm working on that.

Q. Are all turtles within the same created kind?

A. That's what I'm working on.

Friar was not alone among the witnesses in being unable to define "kind" or to say how their organisms of study might fit into the concept.

Ennis brought the cross-examination to an end by asking Friar to read a passage from his book *The Case for Creation*. The passage contained the assertion of a separate ancestry for man and apes, based solely on the scriptures.

Q. You believe that the choice between evolution and creation is a matter of faith, don't you?

A. There's certainly an element of faith in it.

Q. Do you recall in your deposition my asking you the following question and your giving the following answer?

Q. You believe the choice between evolution and creation is a matter of faith, don't you?

A. Basically, yes.

Q. No further questions.

Margaret Helder, a botanist from Canada and vice president of the Creation Research Society, followed Friar to the stand. She described evidence on the nuclear structure and biochemical characteristics of green algae which, she suggested, conflicted with the commonly held notion that these organisms were the ancestors of higher plants. In cross-examination Garry Crawford established that Helder had finished professional teaching in 1974, had published one paper in noncreationist literature since 1971, and that she was totally alone in her ideas. He also asked her to recall stating in her deposition that there was no scientific evidence for special creation. She did.

Next to the witness stand was Donald Chittick, a physical chemist from Oregon and a member of the Creation Science Research Society. He covered a wide range of topics in his testimony, including chemical evidence that coal formed rapidly, geophysical evidence that radiometric dating was invalid, geological evidence for a worldwide flood, and physical chemical evidence that the world is only 10,000 years old.

This last point was based on the assertion that as most radioactive decay involves the release of helium (Chittick presumably meant alpha particles), there ought to be far more helium in the atmosphere than in fact there is, if the world is as old as geologists contend. Chittick apparently did not take into account that most atmospheric helium is lost into space because it is so light a gas. His calculation that the amount of helium in the atmosphere shows the earth to be 10,000 years old is therefore invalid.

Crawford did not touch on this point in cross-examination. Instead he immediately established Chittick's lack of credentials in radiometric dating.

Q. You have had no formal course in radiometric dating for 20 years, have you?

A. Not since then.

Q. You have never published an article on radiometric dating, have you?

A. Yes.

Q. You have had only one article in a refereed journal since 1960, isn't that correct?

A. Correct.

Crawford then turned to part of Chittick's direct testimony in which he had referred to scientific papers on radiometric dating that had appeared to be dogged with terrible difficulties.

Q. In fact, the article you referred to was examining the suitability of certain minerals for dating techniques. The au-

Magazine of the People

Short exchange between counsel for the defense and defense witness Harold Coffin of the Geosciences Research Institute, Loma Linda University, California, at the recent creationism trial in Little Rock:

Q. You've had papers published in scientific journals, haven't you?

A. Yes, I have.

Q. Give me an example.

A. *Science* magazine.

Q. That's a kind of *Readers Digest* of science, isn't it?

A. You could say that.

—Roger Lewin

Smithsonian Cuts Up Anthropological Film Unit

A lengthy bureaucratic struggle at the Smithsonian Institution has resulted in a splitting up of its youthful National Human Studies Film Center, an action that many fear will severely hamper the center's filmmaking activities.

The film center was set up 7 years ago by anthropologist E. Richard Sorenson. Sorenson, in a break from traditional anthropology, has pioneered in the use of film as a scientific tool for examining in detail the behavioral patterns of vanishing Third World cultures. The center has also operated an archive which collects and catalogs old as well as new anthropological films. The center, with about seven full-time employees including four filmmakers, has suffered inadequate funding for most of its existence, but Congress has raised the level in the past few years in response to pleas from anthropologist Margaret Mead, who died in 1978. The fiscal 1981 appropriation was \$477,000.

The center is now being divided up, with the archives being turned over to the new Museum of Man, situated in the Museum of Natural History. Two-thirds of the film center's budget is now to go to the archives, leaving the filming unit with the remaining one-third. It will be left with four employees including Sorenson and two filmmakers trained by him, a Tibetan and an Elithian from the Caroline Islands.

Sorenson's \$50,000 annual travel allowance is also being halved. A memo prepared by a lawyer for the center indicates that the "restructuring" of the film center is a way for the Smithsonian to divert more money into the Museum of Man, which Congress has refused to fund.

Matthew Huxley, secretary to the film center's national advisory council, calls the development a "total disaster" which will make it impossible to film many Third World cultures before they are engulfed by modern civilization. He blames the problem on "short-sightedness" of Smithsonian management and intramural jealousies as well as a certain lack of political finesse on the part of Sorenson, who prefers being out in the field to staying home and building up his constituency. Huxley adds "if we can't get Smithsonian support we're going to have a hell of a time trying to raise money" for filming.

Despite the unhappiness at the center, Smithsonian Under secretary Phillip S. Hughes, the principal figure in pushing the reorganization, says most people favor the new arrangement. He told *Science* there has been an imbalance between filming and archival activity and more resources need to be put in the archival side, which includes locating and preserving old films. He believes the current filming activities will not be adversely affected and says that Sorenson has expressed confidence that he will be able to supplement his budget with increased private donations. Sorenson, off on an 8-month filming project in India, was unavailable for comment.—**Constance Holden**

NSF Finally Gets a Budget for FY 1982

On 10 December, the House of Representatives agreed to the Senate amendment to the House amendment to Senate amendment number 4 of the appropriations bill for the National Science Foundation (NSF). So, after months of uncertainty, NSF's budget for fiscal year (FY) 1982—it began 3 months ago—finally cleared the Congress. But even at this stage, about all that can be said with certainty is that

NSF's budget has been cut, though not by as much as the Reagan Administration wanted.

The bill provides about \$1.03 billion for NSF, which is virtually the same as the foundation spent in FY 1981. But, under the threat of a presidential veto, Congress agreed to let the Administration cut up to 4 percent from the total, and it permitted the Office of Management and Budget (OMB) to decide within certain limits, where to apply the knife. This, in effect, means that NSF will end up with about \$994 million, a considerable reduction from last year's level after inflation is factored in. Reagan, however, had requested a budget of only \$909 million.

Congress refused to go along with the Reagan Administration's proposal to phase out NSF's science education activities, but it did prune them severely. The bill contains \$21 million for science education, a drop of \$50 million from last year's total. Most of what is left will be taken up by NSF's fellowship programs.

NSF officials are now negotiating with OMB over how the 4 percent reduction will be applied, and they expect the final totals for each program will be settled by early January.—**Colin Norman**

American Scientists Protest Polish Actions

American scientific organizations have reacted to arrests of Polish scientists and scholars by registering formal protests with Polish authorities and seeking information on the welfare of persons reported detained.

Details of the number of arrests and the identities of those held has been unobtainable in this country. However, reports through unofficial channels from Poland indicate that hundreds of Polish citizens have been taken into custody since martial law was imposed and that a number of scientists and scholars are included.

It is known that on 14 December Polish police and military entered the building of the Polish Academy of Sciences in Warsaw and arrested members of the academy staff. The assumption here is that authorities sought persons active in Solidarity,

the independent national union, or those known to be politically active.

In a message directed to his counterpart in the Polish academy, U.S. National Academy of Sciences President Frank Press alluded to actions against "fellow workers at the Polish Academy in Warsaw," and said "as president of the National Academy of Sciences, I wish to express on behalf of myself, on behalf of this institution, and on behalf of the American academic community whom we serve and represent, our collective horror at the flagrant violation of the human rights of our colleagues in Poland, and our sincere desire to see these wrongs redressed."

Similar messages were sent in behalf of the AAAS and Federation of American Scientists. On 23 December AAAS staff members presented a letter to Polish embassy officials in Washington which included the names of nine Polish scholars reported to be in custody. The list was obtained through the offices of NAS and is thought to be reliable. Included on the list were the names of B. Geremek, who is a historian at Warsaw University and is known as leader of a faction of Solidarity, and E. Lipinski, 93, a retired economist. Lipinski was a founding member of the Committee for Social Self Defense (KOR), an active human rights group formed in 1976, and had recently been outspoken in his criticism of the Polish regime. There have been reports of detainees being held in conditions of severe physical hardship.

The AAAS letter, signed by executive officer William D. Carey, was addressed to the head of the Polish government, Wojciech Jaruzelski, and expressed the hope that the government will respect "the rights of all persons to due process and fair trial as stated in the Universal Declaration of Human Rights." The letter also requested specific information about the welfare of the persons listed.

An official of the Polish Embassy told AAAS staff that the arrests at the Polish academy occurred when a meeting took place there in violation of emergency restrictions barring such gatherings. The official said that for many in custody, detention is expected to be temporary, ending when the immediate situation eases. Only those charged with specific offenses would be held.

—**John Walsh**