

who spoke with *Science* advocated the use of Placidyl or Valium to treat back pain, few strongly opposed the practice. Russell Patterson, chairman of the department of neurosurgery at the New York Hospital in Manhattan, offered a comment characteristic of those received. He said, "Everybody has his own recipe for dealing with lower back pain. I'm a therapeutic nihilist myself. I try to talk to the patient and urge him to take aspirin." But Patterson believes it is

"perfectly acceptable" to prescribe Valium or other soothing drugs in an effort to "sedate those back muscles." He adds: "I am sure there are oodles of patients cruising around the country, taking those drugs for back pain."

Nelson Hendler, chief psychiatrist for Johns Hopkins University's Pain Treatment Center, argues strongly against the use of tranquilizers, although he thinks it is common to treat back pain with them. Hendler would never prescribe Placidyl

or Valium because he does not consider them to be pain-killers or muscle relaxants. However, he says, they are addictive mood-altering drugs which can impair the intellect, weaken the memory, and interfere with natural sleep.

The important question in this controversy, said one media-shy neurosurgeon at Tufts University, "is not whether doctors are prescribing these drugs; it is whether Supreme Court Justices should be taking them."—ELIOT MARSHALL

At AAAS Meeting, a Closing of Ranks

Scientists mount a counterattack on creationism; worries about budget are up, confrontations down

If attendance at the AAAS annual meeting can be taken as an informal indicator, American science appears to be holding its own. The official count for the 5 days of the Washington meeting was just shy of 5000, about the same as the last time the association met in the nation's capital, 1978.

• In the week in which advocates of creation science saw a major court decision go against them in Little Rock, evolution was a lively topic on and off the AAAS program in Washington. Evolution occupied a symposium category of its own this year with all-day sessions on each day of the meeting devoted to scientific aspects of the subject. The creation-evolution controversy was aired in a full-day session on science and belief at a history and philosophy symposium.

The AAAS meeting also served as a rallying ground for efforts to organize national opposition to teaching of creationism. Representatives of some 42 state "committees of correspondence" met on 4 January to discuss ways of opposing infusion of creationist doctrine into the school curriculum.

The AAAS added its official stamp to the counterattack on creationism by passing a resolution against "Forced teaching of creationist beliefs in public school science education." Adopted by both the association's board of directors and the governing council, the resolution charges that "Creationist groups are imposing beliefs disguised as science on teachers and students to the detriment and distortion of public education in the United States." The resolution urges opposition to inclusion in the curricula of "beliefs that are not amenable to the

process of scrutiny, testing and revision that is indispensable to science." AAAS Executive Officer William D. Carey also issued a statement in behalf of the association specifically welcoming the court ruling. Exponents of evolution seemed to be preaching to the converted, since there were no dyed-in-the-wool creationists in evidence at the Washington meeting.

• The level of conflict at the meeting was generally low this year. In the past, controversy has been kindled by issues

ful, is nevertheless necessary and may even be beneficial.

The nub of Keyworth's message was that the "realities of today's competitive world" make it impossible for the United States to be preeminent in all things scientific. This country can still remain the leader in many areas, however, said Keyworth. But to do this, "tough choices [must be] made, and priorities established, before resources are allocated." He went on to say, "The scientific and technological community must learn

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external to science, notably the Vietnam war, or internal, like sociobiology. Political action groups like Science for the People were on the scene at the meeting, and matters such as U.S. policy in El Salvador and nuclear arms policy were broached. But the public policy issues that attracted most attention and concern this year appeared to be those resulting from developments in biology such as the commercialization of biotechnology.

• This year's keynote speaker, President's science adviser George A. Keyworth II, brought no glad tidings, but spoke with the candor that has come to be expected of him. Keyworth repeated his now familiar theme in respect to the science budget: smaller, if not beauti-

to participate in this assessment by playing a more forceful and critical role."

A few days later in his presidential address, the top elected AAAS officer, D. Allen Bromley of Yale, hit the ball back into Keyworth's court when he noted, "... unlike other countries we have not developed coherent national science policies. Indeed, the idea is abhorrent to many. Our free enterprise laissez-faire system has served us well during periods of expansion and growth; but in retrenchment the development of more formal science and technology policies seems to me to be essential if we are to preserve the best aspects of our system."

Bromley then offered some advice on the subject, suggesting that relations be-

tween science and government could be clarified if R & D, which is always discussed in tandem, were unlinked. The Reagan Administration is moving toward separating the two by insisting that the private sector fund a larger share of development costs for civilian applications, Bromley noted. Basic research has traditionally been a public responsibility, but Bromley suspects that basic research could get lost in the funding shuffle. Therefore, he said, "it remains essential that R & D be separated and that basic research be discussed on its own merits as an investment in both the short- and the long-term future of this country."

● This year's AAAS meeting is the last

that will be held in midwinter for the foreseeable future. The 1983 Detroit meeting is scheduled for 26 to 31 May, going through the Memorial Day weekend. The three subsequent meetings—to be held in New York, Los Angeles, and Philadelphia—are also scheduled around Memorial Day.

The decision to move to the spring was apparently clinched by last year's meeting in Toronto, which was held during a period of unusual cold when both temperatures and attendance hit uncomfortable lows. But a search for an optimal time for the meeting has been going on for years.

Winter meetings have been customary

for AAAS since World War II. Until 1972, the week between Christmas and New Year's was a fixture, but disgruntlement over interruption of the holidays caused a move to later winter dates and then, recently, a compromise on the first week in January.

A prime consideration for schedulers of big meetings is to find a time when downtown hotels have rooms available at favorable rates. Memorial Day weekend is one of the dead spots for the urban hotel trade and seems to fit in well with academic schedules. The AAAS will, therefore, be assembling around Memorial Day at least through 1986.

—JOHN WALSH

Judge's Ruling Hits Hard at Creationism

The anxiously awaited decision in the recent Arkansas trial declares creation science to be religion, not science

No one was surprised that Judge William Overton ruled Arkansas' Balanced Treatment Act to be a violation of the constitutional separation of church and state. The scientific community was confident that creation science would be shown to be religion, not science. And the creationists considered the statute to have been inadequately defended and the case presided over by a biased judge.

There was some surprise, however, at the force of the judge's ruling. Overton could have ruled the law to violate the separation clause of the First Amendment on any one of three basic provisions. In the event he judged the law to contravene all three, and his analysis of each of these points is written in such careful terms that attorney general Steve Clark can have little room for appeal. The scope and power of the decision will have crucial influence in the trial of a similar law later this year in Louisiana, even though the judgment sets no binding precedent in that state.

The legal test of the separation clause has been refined over the years, and the most recent formulation derives from a case in 1971, *Lemon v. Kurtzman*. For a statute to be constitutional, it must fulfill three provisions: "First, the statute must have a secular legislative purpose; second, its principal or primary purpose must be one that neither advances nor inhibits religion . . . ; finally, the statute must not foster an excessive government-

tal entanglement with religion." A statute that fails on any of these must be judged unconstitutional.

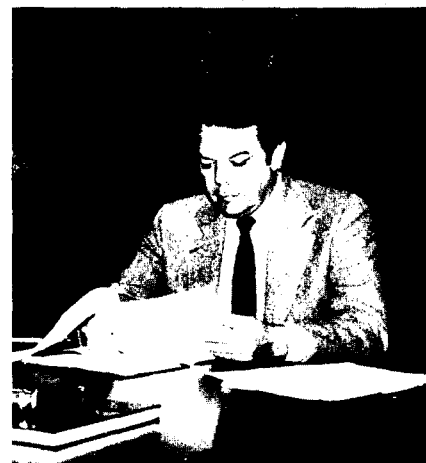
In evaluating the legislative purpose of the act Overton traced the history of the bill's passage and the motives of those involved. First, he showed that the creationist movement is closely identified with the Fundamentalist view of the origins of the earth and life: "belief in the inerrancy of the Genesis story of creation and of a worldwide flood as fact. . . ." Second, he cited subpoenaed correspondence of the bill's author, Paul Ellwanger of Anderson, South Carolina, to show that the prime motive in promulgating the bill was the promotion of Christianity. And third, he concluded that those involved in finding a sponsor for the bill were motivated by religious concerns, as was the senator who introduced the measure into the state legislature.

"The state failed to produce any evidence which would warrant an inference or conclusion that at any point in the process anyone considered the legitimate educational value of the act," writes Overton. "The only inference which can be drawn from these circumstances is that the Act was passed with the specific purpose by the General Assembly of advancing religion."

During the 9-day trial, the defense argued that the Act should be judged on what it says, not on the motives of those

who were responsible for it. Even if this were the case, observed Overton, the Act fails on this count too.

"Both the concepts and wording . . . convey an inescapable religiosity," Overton said in reference to the definition of creation science. For example,



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Judge William Overton

the phrase, "Sudden creation of the universe, energy, and life from nothing," are "not merely similar to the literal interpretation of Genesis; they are identical and parallel to no other story of creation," Overton concluded.

According to this conclusion, "a major effect of the Act is the advancement of particular religious beliefs." In order