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mologists and "population biologists who understand the theory, but may not be on top of the practicalities of control. There is an unfortunate division between pure and applied science that is hurting everybody." There are "no easy outs,"

says Ehrlich, "but a lot of groups have to cooperate."

Governor Brown seemed to have had such a consultation in mind in forming a pest response task force which is commissioned to consider better ways in the future to deal with problems like the

Medfly emergency. All the major players in the present controversy—scientists, agriculture interests, public officials—are represented. And unless a better way to reach consensus is achieved the controversy, like the Medfly, will almost certainly reappear.—JOHN WALSH

New Creationism Bill Already Drafted

With a heavy emphasis on fairness and even-handedness, a new equal time bill increases the threat to science

Just as Arkansas' "Balanced Treatment for Creation-Science and Evolution-Science Act" is being put to the test in Federal District Court in Little Rock,* a new improved draft creationist bill is circulating in legislatures throughout the country. Paul Ellwanger, the architect of the draft bill, hopes the new version will avoid the problems now facing the Arkansas law. "The new draft bill is very tight indeed," he says.

The Arkansas law is being challenged by the American Civil Liberties Union (ACLU) on three counts: first, that the law violates the separation of church and state clause of the First Amendment; second, that it abridges the academic freedom of teachers and students; and third, that it is unconstitutionally vague in what it means by balanced treatment of creation-science and evolution-science.

The ACLU's argument on the first point is that creationism is not a science but a religion. The new draft can do little in detail to circumvent this challenge. It does, however, attempt to eliminate its vulnerability on the second two points.

For a start, the bill no longer goes under the title of "Balanced Treatment." Instead, it is to be known as the "Unbiased Presentation of Creation-Science and Evolution-Science Bill." Ellwanger, who heads a small independent group in Anderson, South Carolina, considers the change to be "crisper and to reflect more immediately what our objective is. Liberals have objected to bias in education," he says, "now let's see them support the removal of bias."

Virtually any phrase that might be construed as referring to a supernatural being has been modified. For instance, its definition of creation-science begins

with "... evidences that indicate creation of the universe, matter and energy suddenly." The phrase "... from nothing" has been dropped. Also dropped from this section is reference to a world-wide flood.

Similarly, the words "... evidences for a relatively recent inception of the earth and living kinds" have been replaced by "... evidences for consideration of several chronometric processes that could reliably indicate the ages of the earth and of life, including both those processes that indicate a multibillion year age and those processes that indicate a relatively more recent inception."

The latest draft bill contains an entirely new section that sets out in detail what is meant by unbiased presentation, noting equality in number of hours devoted to the teaching of creation-science and evolution-science, number of pages in textbooks, number of volumes in libraries, and so on. "This should get round the specific complaint of vagueness in the ACLU suit," says Ellwanger.

Another new section in the draft concerns funding for teaching materials. "One of the biggest sandbagging tactics against unbiased presentation has been the claim of inadequate funds," says Ellwanger. "I want to give teachers legislative support." Essentially, the bill would provide that schools equip themselves with materials needed for unbiased presentation, using existing funds. In other words, no school could claim it had insufficient extra money to purchase the extra books required for giving the creation-science version of origins. So, in order to buy creation-science books, less funds would be available for other areas, including evolutionary theory.

The most extensive changes in the new draft bill come in the section on legislative findings of fact. The persistent

new emphasis here is fairness and even-handedness. "We wanted to avoid being charged with being biased in our aims," explains Ellwanger.

The section begins with the unchallengeable and noble statement that, "The citizens of this State have many different philosophical, religious, scientific, ethical, and other beliefs about the origin of the universe, earth, life, and man." It notes a series of supposed deficiencies in evolution-science, such as unfalsifiability, and unacceptability to many people. But in each case the draft adds the phrase, "... just as creation-science is [unfalsifiable]," or whatever is appropriate. Similarly, the list of alleged deficiencies of public school presentation of evolution-science only is balanced with the phrase, "... just as instruction in only creation-science would [violate academic freedom]," and so on.

It is impossible to read this section and the draft bill as a whole without forming the impression that proper consideration really must be given on both sides—if creationism is a science.

Probably very few evolutionary biologists will be seduced by the anodyne wording, but the draft is likely to soothe many problems legislators might otherwise have had. The last phrase of the draft reads as follows: "The great majority of citizens . . . , whatever their philosophical or religious beliefs about origins, favor unbiased presentation of evolution-science and creation-science in public schools." Survey of public opinion in a recent Associated Press-NBC News poll confirms this claim.

In the absence of a firm ruling against creationism as a science in the Arkansas case, many legislatures will surely find the combination of public opinion and Ellwanger's skillfully crafted draft bill difficult to resist.—ROGER LEWIN

*"Creationism goes on trial in Arkansas," *Science*, 4 December, p. 1101.