

that the CLW's failure to make pre-election disclosure has been referred to the Department of Justice for possible prosecution.

Price also protests that I "failed to discuss normal administrative procedures" through which the council could present its views as to campaign reporting requirements. The fact is I did report that the CLW, in a letter delivered late on the eve of the election, had requested an administrative hearing. I also discussed the constitutional issue which the council might raise if it sought court relief.

In any case, the CLW's emphasis on procedural questions obscures the real issue. In campaign finance reporting, the name of the game is *preelection* disclosure, not disclosure at any old time.

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Carter's article indirectly chastising the Council for a Livable World (CLW) for its opposition to the Secretary of the Senate's interpretation of the Federal Election Campaign Act of 1971 appears to condone both obedience to bureaucratic edict as well as condemnation of anyone not disposed to instant obedience.

Through his unquestioning acceptance of the official definition of the situation, Carter obscures the role of a bureaucracy that legitimizes its own presumptions by delegating to its administrative interpretations the cloak of statutory mandates. The lawlessness involved in such presumptive behavior has recently been highlighted by James W. Moorman in his article "Bureaucracy vs. the law" (1).

That this is an instance of a bureaucratic attempt to harass the CLW is attested to by Carter's own statement that the procedures the council was being held up for were "the reverse of the notorious kind contemplated when the [congressional] regulations were drafted." If anything, CLW's president Doering ought to be congratulated for resisting the discretionary edicts of officials whose arrogance paves the road to an absolutism that is contrary to our ideals and to our laws.

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1. J. W. Moorman, *Sierra Club Bull.* 59, 7 (October 1974).

Evolution and Education

The article by J. V. Grabiner and P. D. Miller (6 Sept. 1974, p. 832) is an interesting and useful account of the treatment of evolution in high school biology textbooks during much of the present century. I believe, however, that some of its statements warrant further consideration.

The authors throughout imply or maintain that the trend against open, or indeed any, discussion of evolution in high school texts was a result of the Scopes trial. Their title—"Effects of the Scopes trial"—sets the premise. I consider this an instance of mistaking effect for cause. The Scopes trial resulted from the fact that teaching evolution in high schools had previously been made illegal in Tennessee, as well as in some other Southern states. The trial thus resulted from a strong trend against such teaching. That the trend continued and accelerated after the trial, as indicated by Grabiner and Miller, shows only that the trial had no marked effect on it.

In fact the trial did not decide any important questions. The drama performed by two mountebanks only publicized equally both sides of the controversy over evolution and thus, in present terms, increased polarization without any evident effect on the balance of opinion on either side. The grandstanding about the Bible and evolution was completely irrelevant to the legal action in that court. It had no bearing on whether Scopes had violated a statute of the state of Tennessee. He had, as both sides freely admitted, and he was correctly found guilty. The proevolutionists' real legal aim was to have Scopes found guilty and to have the statute declared unconstitutional through appeals to higher courts. The appeal and the verdict were simply thrown out, and the proevolutionists lost any chance to achieve their legal aim. The moral issue was whether a state legislature had the competence or natural right to decide a strictly scientific matter. This issue was settled when the Tennessee legislature later repealed the statute in question.

That antievolutionists then found other means to impede the teaching of evolutionary biology, largely by local political pressure and through the greed and pusillanimity of many publishers, is well demonstrated by Grabiner and Miller. They do note, but do not emphasize, that at least one outstanding textbook writer and one publishing

firm—the late Ella Thea Smith and Harcourt Brace (now Harcourt Brace Jovanovich)—consistently and effectively opposed antievolutionist pressure. Smith's text (1), which discussed evolution fully and correctly, went through many editions, and according to Grabiner and Miller it was for some time the second most popular high school text. Harcourt Brace (under changing corporate names) has never issued a nonevolutionary biology text or an expurgated edition of one. I stress the priority of Smith's *Exploring Biology* because there is what I believe to be a self-serving legend that the bold introduction of modern evolutionary biology into high school texts was the much later work of the Biological Sciences Curriculum Study.

Attacks on the teaching of evolution are cyclical and largely coincide with more general antiscience and anti-rationality trends. The antievolutionary aspect of those trends is now taking another approach, well discussed by John Moore (2).

One last quite minor point: Grabiner and Miller credit me with the phrase "One hundred years without Darwin are enough." It is true that I used it, but explicitly as a quotation from H. J. Muller (3).

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1. E. T. Smith, *Exploring Biology* (Harcourt Brace, New York, 1938, 1943, 1949, 1952, 1954, 1959).
2. J. A. Moore, *Daedalus* (summer 1974), p. 173.
3. H. J. Muller, *Sch. Sci. Math.* 59, 304 (1959). See also G. G. Simpson, *Teach. Coll. Rec.* 62, 617 and 623 (1961); *This View of Life* (Harcourt, Brace & World, New York, 1964), p. 36.

The article by Grabiner and Miller on the effects of the Scopes trial was quite timely. The Texas State Board of Education recently adopted the following statement (1).

Textbooks that treat the theory of evolution should identify it as only one of several explanations of the origins of humankind and avoid limiting young people in their search for meanings of their human existence.

Textbooks presented for adoption which treat the subject of evolution substantively in explaining the historical origins of man shall be edited, if necessary, to clarify that the treatment is theoretical rather than factually verifiable. Furthermore, each textbook must carry a statement on an introductory page that any material on evolution included in the book

is clearly presented as theory rather than verified.

Textbooks presented for adoption which do not treat evolution substantively as an instructional topic, but make reference to evolution indirectly or by implication, must be modified, if necessary, to ensure that the reference is clearly to a theory and not to a verified fact. These books will not need to carry a statement on the introductory page.

This statement is part of the guiding document for statewide textbook adoptions in Texas. Fortunately, the adoption of new biology textbooks has been delayed for 2 years, allowing us some time to attempt to reverse this anti-intellectual, regressive policy decision.

The lack of concern by professional biologists for secondary education is largely to blame for this state of affairs. While five texts are approved at roughly 5-year intervals, for statewide adoption, local school boards may choose one from this list. At present, no mention of evolution is made in more than 80 percent of the biology texts that are used in Texas.

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1. *Policies of the Texas State Board of Education* (Texas Education Agency, Austin, 1974), Policy 3331.3, paragraphs 5, 5-1, and 5-2.

When Michigan state legislators were considering bills to force the subject of special creation into biology courses, I sent them the following letter. A version was also published in the local newspaper (1). Since then I have heard nothing more about these bills. If one can judge its effect by some replies in the newspaper, the argument had a strong impact.

Within the science of biology the theory of evolution is a very active and a very fruitful theory. It simplifies the management of millions of facts by giving them a rational order. It leads to the discovery of thousands of new facts each year. These are important characteristics of a good scientific theory.

The so-called theory of special creation is not active or fruitful as a biological theory. Almost no biologists consider it to be a part of the science of biology.

The great tragedy of arguments over the creation theory as opposed to evolution theory is the belittling impact upon religion.

Every scientist knows that the best of scientific theories encompass but limited portions of human experience. Every truly religious person knows that a religion encompasses the vast ranges of human experience and the vaster ranges of all things imagined beyond experience and things

unknown to experience. And a true religion encompasses all this with a majesty, a glory, and a magnificence that engenders hope and steadfastness in the human spirit.

The theory of evolution does not do these things. Rather it sheds light in one corner of man's rational existence. If this relatively small portion of the rational world looms large in a religious context, then the religion must be exceedingly small. Or those who are thinking of these topics in this way must have momentarily forgotten the vastness and majesty of their religion.

When a religious person contemplates the greatness of his religion, all the products of the scientific world seem small. And the presumed contradictions with religion will be seen as minor items of trivial consequence in the large panorama of his religious view.

Let us put away the childish arguments of the last century and get on with the great problems of building both the rational and the religious components of human culture so as to guide the present and the future activities of man toward the great ideals found in the great religions.

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1. R. W. Lewis, *The State Journal* (Lansing, Michigan), 15 March 1973, sec. A, p. 22.

Believing that the concept of evolution is here to stay, I was reminded of the following poem when I read the article by Grabiner and Miller.

Who Made God?

Poems are made by fools like me
But only God can make a tree.

And it's the God who makes a tree
That also makes the fools like me.

But only fools like me, you see,
Can make a God who makes a tree.

—UNKNOWN

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Regarding the article by Grabiner and Miller, it is interesting to note that, in a section entitled "Darwin and the rise of the evolution theory," in Shull's 1920 text *Principles of Animal Biology* (1), it is stated:

Evolution was not accepted without opposition. The churchmen were reluctant to regard the story of creation in any other than a strictly literal way. In the main, however, they watched the progress of the new doctrine with good nature, and at present the leading clergy of most churches are as firmly convinced of evolution as are the biologists.

This was published 5 years before the Scopes trial.

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1. A. F. Shull, *Principles of Animal Biology* (McGraw-Hill, New York, 1920), p. 342.

We agree with George Gaylord Simpson that antievolutionary pressures predate the Scopes trial and have intensified again in the 1970's. Our article included a description of biology textbooks, published both before and after the Scopes trial, which reflected these pressures, and a general discussion of the social and intellectual (or anti-intellectual) climate which produces such pressures. The Scopes trial, as Simpson says, "publicized equally both sides of the controversy over evolution and thus . . . increased polarization." This very polarization alerted fundamentalists to the content of textbooks and intensified the pressures on authors and publishers to cut references to evolution. We emphasized the Scopes trial also because there is a widespread impression that the trial discredited the attacks on evolution, and that, in general, such controversies result in victory for evolutionists as soon as the scientific community makes its views known. In fact, the Scopes trial itself was a setback for the treatment of evolution in high school textbooks, and there is no guarantee that similar things will not recur.

We have received many letters relating circumstances like those described by Fox. Attacks on evolutionary textbooks by legislative groups and by citizen organizations are frequent in the 1970's. In addition, our mail indicates that some publishers are still encouraging authors to down-play evolution in their biology texts. We would be happier if our article were not so timely.

We have also received a number of letters which, like Lewis's, suggest that some members of the scientific community are taking action when governmental bodies try to limit the teaching of evolution. We hope that the biological community will, in addition, continually scrutinize the content of high school textbooks. Eternal vigilance is the price of good biology texts.

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