

REMARKS OF JOHN H. CALVERT, ESQ.
before the
SUBCOMMITTEE ON BASIC EDUCATION
of the
PENNSYLVANIA HOUSE OF REPRESENTATIVES
June 20, 2005

I am John H. Calvert. I have practiced law for the past 37 years in Kansas City. I also have a degree in geology and have used that training in a variety of legal engagements involving investments in mining and oil and gas ventures. For the last five years my practice has focused entirely on constitutionally appropriate ways to teach origins science in public schools. As to that issue I have testified before state legislatures, state school boards, local school boards and other educational agencies and have delivered a number of legal memoranda and opinions regarding a variety of proposals for teaching origins science. I am presently counsel to members of a Kansas Science Writing Committee who have proposed changes to Kansas Science Standards. Those changes seek to inform students about origins in a manner that is both scientifically objective and secular, neutral and non-ideological. During hearings in May regarding those proposals, we introduced the testimony of 23 highly credentialed expert witnesses that validated the scientific and educational propriety of those proposals. The witnesses included four biochemists, five biologists and molecular biologists, three chemists including two origins of life experts, a geneticist, a theoretical physicist, three philosophers of science, a philosopher of Education and Religion, three biology teachers and a Muslim Science Writer. All but five of the witnesses hold PhD's or doctoral degrees.

I am also a managing director of Intelligent Design network, inc., an organization that seeks institutional objectivity in origins science. However, I am testifying today on my own behalf and not on behalf of Idnet.

I am here to testify for the concepts reflected in HB 1007. However, I suggest the bill be modified to more clearly define terms and concepts and broaden its scope. My remarks today will be focused on those changes, which are shown on an attachment to these remarks.

First I would make it clear that "Origins" includes not only the origin of the "world" and "man" but the origin of the universe (cosmology), the origin of life (chemical evolution) and the origin of the diversity of life (biological evolution). At present the major scientific controversies relate to the origin of life itself and then to the origin of major new body plans and complex bio-systems. A key question is whether natural selection provides an adequate explanation for the occurrence of those phenomena.

Second, I would expand the scope of scientific controversies covered by the bill. The debate over how to teach origins is not confined to "intelligent design." Many in the science education community have also sought to suppress legitimate scientific criticisms of chemical and Darwinian evolution. A primary goal of the National Science Teachers Association is to ensure that schools and teachers do not "weaken" evolutionary theory. Teachers that ignore this advice have been reassigned. School boards who have attempted to expand the academic freedom of teachers to teach the scientific controversy have been pressured by the science establishment, ridiculed in the media and threatened with law suits. So I would expand the bill to make it clear that it is also appropriate for schools to teach origins science critically.

You have often heard that there is no scientific controversy over evolution. This claim is fundamentally wrong because origins is a historical rather than an experimental science. Unlike the claims of physics and chemistry, evolutionary historical narratives can not be rigorously tested by empirical methods of observation and experimentation. As a consequence the history written by an origins scientist like an evolutionary biologist, much of which is driven by imagination, is inherently uncertain, subjective and speculative. It is an area of science where nothing can really be proved as “fact.” One can only reach an inference to the best current explanation. Further, because the subject unavoidably impacts religion, it will forever be controversial, both from a religious and scientific perspective. Students need to be informed of both sides of the scientific controversy to be adequately “informed” about origins. The current educational paradigm discourages that kind of discussion. HB 1001 as revised will encourage it.

Thirdly, I would make clear what we mean by “intelligent design.” The present bill does not define “intelligent design.” This worries me because there is significant misunderstanding about the nature of its scientific claims. At its core, ID is merely an inference of design that arises from an observation and analysis of certain natural phenomena, particularly complex bio-chemical systems. Most scientists agree that these systems look designed, but claim that the appearance of design is just an illusion that can be explained away by natural selection. At its core evolution postulates that life is not designed, but rather is the result of “unguided evolutionary change.”¹ So, in essence ID is merely the scientific disagreement with the core claim of evolution.

National Science Standards published by the National Academy of Science actually teach that natural phenomena lack the attribute of design. ID scientists simply disagree and support their disagreement with empirical scientific evidence and analysis.

Further ID is a very limited historical hypothesis that does not expect to ever be absolutely proved from a scientific standpoint. It is a purely theoretical claim that seeks to challenge rather than to replace its scientific competitor. It makes no statement about the identity of any possible designer because the available data does not permit a scientific response to that question. The utility of the design hypothesis is not confined to origins. It is a powerful working hypothesis that is now being used in scientific investigation to understand and “reverse engineer” the “architecture” of the genome.

¹ This is a fundamental tenet of *Humanist Manifesto III* (American Humanist Association, 2003): “Humanism is a progressive philosophy of life that, *without supernaturalism*, affirms our ability and responsibility to lead ethical lives of personal fulfillment that aspire to the greater good of humanity. The life stance of Humanism—*guided by reason....Knowledge of the world is derived by observation, experimentation, and rational analysis. Humanists find that science is the best method for determining this knowledge as well as for solving problems and developing beneficial technologies. Humans are an integral part of nature, the result of unguided evolutionary change. Humanists recognize nature as self-existing.* We accept our life as all and enough, distinguishing things as they are from things as we might wish or imagine them to be. ...Ethical values are derived from human need and interest as tested by experience.”

For the foregoing reasons, I would revise the operative language of the bill to state more broadly that:

“(a) In public school instruction of scientific theories concerning the origin of the universe, the origin of life or the origin of the diversity of life (“origins”), the instruction *may* include information regarding both sides of any scientific controversy relating to origins, including scientific data and analysis that challenge naturalistic claims that natural phenomena lack the attribute of design.”

Perhaps the most important word in the legislation is the word “may.” By using “may” rather than “shall,” the legislation does not require schools to do anything. Instead, the word “may” serves only to encourage an expansion of academic freedom in an area of education that is highly controversial and emotionally stressful for students, teachers, parents and school administrators.

In Kansas we introduced testimony from teachers who have been severely sanctioned for doing anything that would tend to “weaken” evolutionary theory. Teachers are afraid to teach the subject candidly and do not know what they can and can not teach. This legislation would be a step toward taking fear and stress out of school district board rooms and biology class rooms.

Fourth I would define precisely what we mean by the term “scientific” as it relates to scientific theories of origins. I believe it would be helpful if the bill would explain that:

(b) The term “scientific” is intended to include hypotheses and inferences derived from an objective and unbiased application of the scientific method, but not hypotheses or claims derived solely from a religious text.

This would exclude from the discussion biblical accounts of origins that have been incorporated in “creation science” initiatives that have been ruled unconstitutional.

Finally, because origins science unavoidably impacts religion, I believe it would be helpful to add the following guidance:

“(c) Instruction regarding scientific theories of origins should strive to be secular, neutral and non-ideological.”

The requirement that instruction be “secular, neutral and non-ideological,” derives from Supreme Court Jurisprudence and provisions of the No Child Left Behind Act.² Definitions of the terms “secular,” “neutral,” and “non-ideological” are provided in a

² For a discussion of this issue see: John H. Calvert, Esq. and William S. Harris, PhD, *Authors’ Suggested Findings of Fact And Conclusions of Law, Before The Science Committee of The Kansas State Board of Education*, p. 47-49 (May 26, 2005), filed with the Kansas State Board of Education and posted at: <http://www.KansasScience2005.com>.

policy adopted by the National Assessment Governing Board as shown in the attachment to these remarks.

Secular means that the state will not favor or disfavor a particular religious belief. Supreme Court opinions and the testimony at the Kansas hearings show that “religion” encompasses not only theistic religions, but also non-theistic religions and belief systems like Secular Humanism and Atheism.

So how does the state achieve origins science education that is secular, neutral and non-ideological? The answer is pretty simple. Encourage schools to show students the relevant scientific information on both sides of the controversy. In that way the state will not be favoring one kind of religion over another.

In my opinion, HB 1001 as revised would encourage compliance with that constitutional requirement.

For those interested in the need for this Bill, I would urge you to review the transcript of the hearings recently held in Kansas. Findings of fact and conclusions of law which we filed following the hearings may be found at www.KansasScience2005.com The Hearings in Kansas addressed a number of topics pertinent to this legislation.

Thank you for this opportunity to speak about a very important subject.

John H. Calvert, Esq.

Revisions to HB 1007 suggested by John H. Calvert, Esq.

(Additions are underscored in bold italics. Deletions are not shown.)

AN ACT

Amending the act of March 10, 1949 (P.L.30, No.14), entitled "An act relating to the public school system, including certain provisions applicable as well to private and parochial schools; amending, revising, consolidating and changing the laws relating thereto, "providing for the teaching of scientific theories concerning the origin of **the universe, the origin of life and the origin of the diversity of life ("origins").**

The General Assembly of the Commonwealth of Pennsylvania hereby enacts as follows:

Section 1. The act of March 10, 1949 (P.L.30, No.14), known as the Public School Code of 1949, is amended by adding a section to read:

Section 1516.2. Teaching Theories about Origins.

(a) In public school instruction of scientific theories concerning the origin of the universe, the origin of life or the origin of the diversity of life ("origins"), the instruction may include information regarding both sides of any scientific controversy relating to origins, including scientific data and analysis that challenge naturalistic claims that natural phenomena lack the attribute of design.

(b) The term "scientific" is intended to include hypotheses and inferences derived from an objective and unbiased application of the scientific method, but not hypotheses or claims derived solely from a religious text.

(c) Instruction regarding scientific theories of origins should strive to be secular, neutral and non-ideological.

(d) This section shall not be construed as being adverse to any decision which has been rendered by an appellate court.

Section 2. This act shall be retroactive to July 1, 2005.

Section 3. This act shall take effect July 1, 2005, or immediately, whichever is later.

APPENDIX A³

Definitions of Secular, Neutral, and Non-ideological Item Review Criteria

From Governing Board Policy on NAEP Item Development and Review—5/18/02

Items shall be secular, neutral, and non-ideological. Neither NAEP nor its questions shall advocate a particular religious belief or political stance. Where appropriate, NAEP questions may deal with religious and political issues in a fair and objective way. The following definitions shall apply to the review of all NAEP test questions, reading passages, and supplementary materials used in the assessment:

Secular — NAEP questions will not contain language that advocates or opposes any particular religious views or beliefs, nor will items compare one religion unfavorably to another. However, items may contain references to religions, religious symbolism, or members of religious groups where appropriate.

Examples: The following phrases would be acceptable: “shaped like a Christmas tree,” “religious tolerance is one of the key aspects of a free society,” “Dr. Martin Luther King, Jr. was a Baptist minister,” or “Hinduism is the predominant religion in India.”

Neutral and Non-ideological — **Items will not advocate for** a particular political party or partisan issue, for any specific legislative or electoral result, or for **a single perspective on a controversial issue. An item may ask students to explain both sides of a debate, or it may ask them to analyze an issue, or to explain the arguments of proponents or opponents, without requiring students to endorse personally the position they are describing.** Item writers should have the flexibility to develop questions that measure important knowledge and skills without requiring both pro and con responses to every item. (Emphasis not contained in Appendix issued by NAGB)

Examples: Students may be asked to compare and contrast positions on states rights, based on excerpts from speeches by X and Y; to analyze the themes of Franklin D. Roosevelt’s first and second inaugural addresses; to identify the purpose of the Monroe Doctrine; or to select a position on the issue of suburban growth and cite evidence to support this position. Or, students may be asked to provide arguments either for or against Woodrow Wilson’s decision to enter World War I. A NAEP question could ask students to summarize the dissenting opinion in a landmark Supreme Court case.

The criteria of neutral and non-ideological also pertain to decisions about the pool of test questions in a subject area, taken as a whole. **The Board shall review the entire item pool for a subject area to ensure that it is balanced in terms of the perspectives and issues presented.** (emphasis added)

³ National Assessment Governing Board, *Collection and Reporting of Background Data by the National Assessment of Educational Progress Policy Statement, Appendix A, Definitions of Secular, Neutral, and Non-ideological: Item Review Criteria* (NAGB, May 18, 2003).