

Response to Written Comments—June 25, 2003 and July 9, 2003

[Written Comments Received by June 25, 2003]

This document contains Holt, Rinehart and Winston's response to specific comments made during the public testimony given before the State Board of Education on July 9, 2003 about *Holt Biology Texas* and about the biology books being considered for adoption in general

If the written comments distributed on July 9, 2003 reflect the public testimony, the publisher's response is found within the accompanying document "Response to Oral Testimony—July 9, 2003." If the documents distributed by the speaker on July 9, 2003 contain text other than the text of the oral testimony, the publisher's response to that text is found in this document.

For ease of reading this document, the publisher has duplicated the specific comments made by the petitioner and has followed each comment with its response.

Benjamin G. Liles, Jr.'s Comments

(no specific reference to *Holt Biology Texas*)

Elaina Gross's Comments

(no specific reference to *Holt Biology Texas*)

Morton D. Prager Comments

(no specific reference to *Holt Biology Texas*)

Eleanor Hutcheson's Comments

"Holt Biology
page 12- Hope—no mention of large population affected and current outcome of death."

HRW Response: The publisher thanks the petitioner for her comments. The first mention of AIDS in this textbook is intentionally cursory—it is one of several problems cited that biologists are working to solve, and it is woven into a multifaceted introduction to issues in biology. With respect to the accuracy and the urgency of information about AIDS, however, the publisher agrees with the petitioner's concern and will request permission from the Texas Education Agency to revise the second sentence under the heading "AIDS" on p. 12 to read:

"AIDS is a fatal disease cause by HIV, a virus that attacks and destroys the human immune system." (Underline added to show altered wording.)

Eleanor Hutcheson's Comments (which are largely quotes from *Holt Biology Texas*)

"page 86 col 3 "the consequences are deadly—HIV eventually destroy most of the body's lymphocytes. This shift in the allegiance of from one type of co-receptor to another leads directly to the onset [of] AIDS."

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Eleanor Hutcheson's Comments (cont.)

"page 439 last sent, 'It is transmitted in body fluids (such as semen or vaginal fluid) through sexual contact and in blood through the sharing of non sterile needles. It is also transmitted to infants during pregnancy or through breast milk.'"

"Page 935 Chart tracking the spread of AIDS showing in 1996 cumulative cases of over 350,000 in the United States. Transmission given in the top paragraph with a mention that use of a latex condom reduces but does not eliminate the risk of acquiring or spreading HIV."

"Page 1010 2nd par, "AIDS is a fatal disease caused by the human virus (HIV) immunodeficiency..."

"3rd par, 'The number of HIV infections among teenagers and young adults had increased dramatically over the last decade. AIDS is now the leading killer of African-American men between the ages of 25 and 44. More than 460,000 people in the United States have already died from AIDS. The number of young adults in the United States with AIDS has increased drastically over the last 15 years. While the number of new AIDS cases reported has decreased each year since 1993 due to improved drug treatments, new HIV infections among young adults. Researchers are trying to develop new treatments for AIDS.'"

"COMMENT: On page 1010 in this text is a very important sentence. It is unfortunate that it took so many pages to print this, "AIDS is a fatal disease." Added should be the warning, YOU WILL DIE IF YOU GET IT. On page 86 one finds the comment that the consequences are deadly. What teenage[r] understands that statement?"

"To prevent AIDS from spreading rapidly in this country as it has in Africa, now India, and Asia, it is imperative that the young people be correctly taught the complete truth.

1. Primary lesson: Condoms DO NOT prevent HIV, which becomes AIDS, The virus is so small that it can and does pass through the latex of a condom.
2. "many devastating illnesses and often death," mean simply, if you get it, you DIE. No two ways about it.
3. There are four basic methods of transmission, from mother to child, from non-sterile needles, blood transfusion, heterosexual sex, and all forms of homosexual activities. In this country over 90% of the HIV/AIDS patients acquired this virus from homosexual activities."

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HRW Response: The publisher thanks the petitioner for her comments. It is the publisher's intent to provide factually correct, current, and relevant information about HIV and AIDS to students. As the petitioner has noted, *Holt Biology Texas*

- Identifies AIDS as a fatal disease;

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- Identifies the main means of transmission: in body fluids through sexual contact; from mother to child; and through the sharing of hypodermic needles;
- Identifies the numbers of HIV-infected individuals, AIDS patients, and deaths from AIDS. (*Holt Biology Texas* lists current statistics as published by the Centers for Disease Control and Prevention for the graph on p. 935.);
- Notes that using a latex condom will reduce but not eliminate the risk of getting or spreading HIV;
- Explains the putative molecular mechanisms for HIV's activity in the human body, including the puzzling period of latency between HIV infection and development of AIDS.

Given the depth and frequency of coverage of HIV/AIDS in *Holt Biology Texas*, The publisher believes this textbook is effective explaining to students the relevant issues that surround HIV and AIDS.

Jon Roland's Comments

(no specific reference to *Holt Biology Texas*)

Center for Science and Culture—Discovery Institute (report)

Discovery Institute Comment:

"Textbook 9

George Johnson & Peter Raven

Holt Biology (2004)

TOPIC I: The 1953 Miller-Urey Experiment

a. This book contains a drawing of the Miller-Urey apparatus (on p. 254) accompanied by a misleading caption that states: "Miller simulated the early earth's conditions."

HRW Response: The publisher thanks the petitioner for its comments. The first sentence in caption on p. 254 actually states "Miller simulated the early Earth's conditions *as hypothesized by Oparin, Urey, and other scientists.*" (Italics added.) Miller simulated Earth's early conditions based on what scientists had understood at the time about the primitive Earth's atmosphere—that is that it was primarily a reducing environment. Although the text explains that Oparin's hypothesis about the composition of the early atmosphere is now known to be incorrect, the publisher agrees with the petitioner's concern and will request permission from the Texas Education Agency to make the following change to the caption:

"Miller simulated an atmospheric composition that Oparin and other scientists incorrectly hypothesized existed on early Earth."

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Discovery Institute Comment:

TOPIC I: The 1953 Miller-Urey Experiment

b. The better than average account in the text points out that the Miller-Urey model is being re-evaluated because "we now know that the mixture of gases used in Miller's experiment could not

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have existed on the early earth," and it informs students that when methane and ammonia "are absent the Miller-Urey experiment, key biological molecules are not made." Nevertheless, the text minimizes the problem by speculating that those molecules could have formed in bubbles in the ocean."

HRW Response: The publisher thanks the petitioner for its comments. The publisher appreciates the acknowledgement of its attempt to inform students about what scientists now understand about the composition of gases on the early Earth. In the interest of further accuracy, the publisher will request permission from the Texas Education Agency to make the following change to the last paragraph on p. 254:

"We now know that the reductant molecules used in Miller's experiment could not have existed in abundance on the early Earth." (Underline added to show altered wording.)

The presentation in *Holt Biology Texas* of Lerman's "bubble model" is an attempt to present an alternative hypothesis for abiogenesis, assuming that it did not occur in a reducing atmosphere. Current hypotheses for the origin of life range from life beginning in deep sea thermal vents to bacterial life originating in other places in the universe. Consequently, presentation of two alternative hypotheses demonstrates to the student that for cases in which actual data are spotty, two or more competing hypotheses that are supported by all available data may—and indeed should—be simultaneously analyzed, reviewed, and critiqued.

Discovery Institute Comment:

"TOPIC I: The 1953 Miller-Urey Experiment
c. Because of its misleading caption and lack of sufficient information, the text does not enable students to 'analyze, review, and critique' this scientific explanation as to its 'strengths and weaknesses using scientific evidence and information' (TEKS 112.43c(3)A)."

HRW Response: The publisher thanks the petitioner for its comments. The publisher agrees with the petitioner's concern and will request permission from the Texas Education Agency to replace question 20 on p. 271 with the following:

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20. Finding and Communicating Information Use the media center or Internet resources to study hypotheses for the origin of life that are alternatives to the hypotheses proposed by Oparin and Lerman. Analyze, review, and critique either Oparin's hypothesis or Lerman's hypothesis as presented in your textbook along with one alternative hypothesis that you discover in your research. (Underline added to show altered wording.)

Discovery Institute Comment:

"TOPIC II: Darwin's Tree of Life & The Cambrian Explosion
a. This book states that "most phyla that exist today probably originated during the Cambrian period" (on p. 262), but it does not explicitly mention the Cambrian explosion, or even that the animal phyla appeared relatively suddenly."

HRW Response: The publisher thanks the petitioner for its comments. The Discovery Institute is correct in noting that *Holt Biology Texas* did not mention the Cambrian explosion by name, or explicitly discuss the conclusion drawn from the fossil record that animal phyla appeared relatively suddenly. The publisher agrees with the petitioner's concern and will request permission from the Texas Education Agency to make the following change in the text on p. 262:

"Most animal phyla that exist today probably originated during a relatively short time span (160 million years) during the late Precambrian and early Cambrian periods. This rapid diversification of animals is known as the "Cambrian explosion." (Underline added to show altered wording.)

Discovery Institute Comment:

"TOPIC II: Darwin's Tree of Life & The Cambrian Explosion
b. Since the book fails to mention the Cambrian explosion, much less discuss the challenge it poses to Darwin's theory, the book does not enable students to 'analyze, review, and critique' the theory that all animals are descended from a common ancestor as to its 'strengths and weaknesses using scientific evidence and information' (TEKS 112.43c(3)A)."

HRW Response: The publisher thanks the petitioner for its comments. The publisher joins with the Discovery Institute in recognizing the value in challenging students to critically evaluate Darwin's theory of the major mechanisms involved in descent with modification from a common ancestor. The publisher does not agree, however, that the Cambrian explosion challenges Darwin's theory. The rapid diversification of animal phyla that occurred immediate before and during the Cambrian period spans 160 million years of evolution, and many of the major animal groups familiar to us today, such as fishes, amphibians, reptiles, birds, and mammals, evolved long after the Cambrian period. Nevertheless, this remarkable diversification of animal phyla has led to a debate regarding how and why it occurred in such a relatively short period of time. The publisher agrees with the petitioner's concern regarding this debate and will request

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permission from the Texas Education Agency to add make the following change to question 19 on p. 271:

19. Propose a hypothesis for the appearance of all animal phyla on Earth within a relatively short period during the late Precambrian and early Cambrian periods.
(Underline added to show altered wording.)

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**[Handouts Accompanying Public testimony as presented in the document
“Handouts 07-09-03.pdf”]**

Various authors including Francis J. Beckwith

(no specific reference to *Holt Biology Texas*)

Francis J. Beckwith

(no specific reference to *Holt Biology Texas*)

Jennifer Walker, Lone Star Sierra Club

(no specific reference to *Holt Biology Texas*)

Sandra Coffey

(no specific reference to *Holt Biology Texas*)

John Courage

(no specific reference to *Holt Biology Texas*)

Edwin S Darrell

(Discussion of most of material in this petitioner’s written handout is found in “Response to Oral Testimony—July 9, 2003.”

“None of the texts are particularly outstanding as I would like them to be about the history and biography of the people in biology. Darwin’s great genius, and his great good nature which endeared him to all who knew him, is rarely on display. Science is rarely done by dull men in white lab coats, in reality, and it would be nice to know more about some of the people who do the work.”

“Those criticisms are beyond the scope of the review you are allowed under the law, however, These might be classes as error by omission, and I hope the publishers, authors and editors can find a way to fix the problems in the future.”

HRW Response: The publisher thanks the petitioner for his favorable comments about the biology books being considered for adoption. *Holt Biology Texas* devotes 6 pages of a 7-page lesson to a discussion of Charles Darwin—his personal history and how that ultimately impacted scientific. The publisher acknowledges and agrees with Mr. Darrell that conveying the humanity, the circumstances, and the reasoning processes of scientists greatly enriches the student’s understanding of and interest in science. The publisher is somewhat constrained, however, by the large volume of other information that must be presented in a high school biology text of broad scope, such as *Holt Biology Texas*.

Morton D. Praeger (as represented by Beverly Tobian)

(no specific reference to *Holt Biology Texas*)

**[Handouts Accompanying Public testimony as presented in the document
“Handouts 07-09-03.pdf”]**

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Terry C. Maxwell' Comments

"The textbooks submitted to you have been written by accomplished scientists including such people of note as Gordon Orrians and Peter Raven. That these textbook authors or their publisher would included evidences for evolution that are inaccurate, out of date, or fraudulent, as claimed by Well's Icons is an accusation that the Texas State Board of Education should consider only briefly, if at all..."

HRW Response: The publisher thanks the petitioner for his favorable comments about the biology books being considered for adoption, and about Peter Raven, an author of *Holt Biology Texas*.

Robert Bohmfalk

(no specific reference to *Holt Biology Texas*)

Gerald Skoog

(no specific reference to *Holt Biology Texas*)

Bassett Maguire

(Discussion of material in this petitioner's handout is found in "Response to Oral Testimony—July 9, 2003.")

Robert Dennison

(Discussion of material in this petitioner's handout is found in "Response to Oral Testimony—July 9, 2003.")

Oak DeBerg

(Discussion of material in this petitioner's handout is found in "Response to Oral Testimony—July 9, 2003.")

Bret A. Corum

(Discussion of material in this petitioner's handout is found in "Response to Oral Testimony—July 9, 2003")

Richard Fralin

(no specific reference to *Holt Biology Texas*)

Eleanor Hutcheson

(Discussion of this petitioner's comments is found in the first section of this document under the heading "Written Comments Received by June 25, 2003.")

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**[Handouts Accompanying Public testimony as presented in the document
“Handouts 07-09-03.pdf”]**

Jon Roland (Constitution Society)

(Discussion of material in this petitioner’s handout is found in “Response to Oral Testimony—July 9, 2003.”)

Frank Mayo

(Discussion of material in this petitioner’s handout is found in “Response to Oral Testimony—July 9, 2003.”)

Steve Bratteng’s Comments

“I have looked at the textbooks being considered and have found that, for the most part, they do a fairly good job of presenting biology, including evolution. I would like to see better treatment of the Three Domain system of classification, but that’s a fairly minor quibble.”

HRW Response: The publisher thanks the petitioner for his favorable comments about the biology books being considered for adoption. *Holt Biology Texas* devotes a 5-page lesson and a single page in the appendix to the three-domain system of classification. This material explains the rationale and history of the development of the three-domain system, as well as the classification of the more familiar six kingdoms as three domains.

Steve Bratteng’s Comments

“However, nearly all introductory biology books are deficient in one regard—they simplify concepts and information in an attempt to make science more accessible to all students.

This has introduced a level of imprecision in high school biology books...”

HRW Response: The publisher acknowledges that delivery of extremely complex information to high school students who have a limited background in advanced science requires that concepts be simplified. The publisher has endeavored to deliver complex information as accurately as possible, while retaining accessibility for the average high school biology student.

Steven Schafersman (Texas Citizens for Science)

(Discussion of material in this petitioner’s handout is found in “Response to Oral Testimony—July 9, 2003.”)

MerryLynn Gerstenschlager

(no specific reference to *Holt Biology Texas*)

Amanda Walker

(no specific reference to *Holt Biology Texas*)

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**[Handouts Accompanying Public testimony as presented in the document
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David Hillis

(no specific reference to *Holt Biology Texas*)

Raymond G. Bohlin

(Discussion of material in this petitioner’s handout is found in “Response to Oral Testimony—July 9, 2003.” Written comments not reflected in his spoken testimony included no specific reference to *Holt Biology Texas*.)

Thomas M. Davis,

(no specific reference to *Holt Biology Texas*)