

CREATION SCIENCE TEXTBOOK ADDENDA

**For the textbook
GENERAL SCIENCE**

by

Watkins, Emiliani, Chiaverina, Harper, LaHart

**Harcourt Brace Jovanovich, Publishers
1989**

Written by

Charles H. Voss, Ph.D

Electrical Engineering

Consultants:

Robert Allen, M.S. Biology; Edward A. Boudreaux, Ph.D., Chemistry and Chemical Physics; James J. Devitt, L.L.B., B.S. Geology; Lester Landon, D.V.M.; Richard D. Lumsden, Ph.D., Cellular Biology and Biochemistry; Martin Ehde, Jr., M.A.L.S., Mathematics, Ph.D. Theology; James Mahler, B.S., M.S., D.V.M.; David Prentice, B.S., M.Ed., M.A.S.T.

© 1996

This paper may be reproduced only if the entire paper is copied. It is not to be sold. Copying parts of this paper is strictly forbidden without the written permission of the author.

BY WAY OF EXPLANATION

This presentation is not intended to be a complete discussion of the evidence for creation but rather a supplement to the textbook *General Science*. It presents the scientific creation position on the textbook subjects relating to origins so that the classroom teachers do not have to make a presentation on material in an area where they have little or no background. This material is presented at a level that is consistent with the student's background. Reference to the textbook must be made in order to get a clear picture of the evolutionary perspective on the subject being discussed. If more information is desired on a particular subject, please get the more complete presentation given in the discussion of the Biology textbook ¹⁴ or contact the author.

INTRODUCTION

Most General Science textbooks present the of life from only a single viewpoint. They fail to acknowledge that there are two major scientific theories of origins - evolution and creation. Only scientific aspects of creation and evolution will be examined since they are furthest apart in concept and all other origin theories are some combination of these two. The textbook presents only evolutionary concepts, so the material furnished here will rebut these concepts from a creationist perspective.

This presentation will show where and why creation scientists do not agree with all of the ideas on origins presented in the textbook *General Science* by Watkins, Emiliani, Chiaverina, Harper and LaHart published by Harcourt Brace Jovanovich in 1989. The facts presented by the textbook authors are accepted by creation scientists but they, however, come to different conclusions because there are additional facts not presented in the textbook which cannot be overlooked. These additional facts support another theory to explain the observed facts - creation.

Anyone who reads the newspapers, magazines and journals, listens to radio or watches TV, is aware that the media presents the idea that all or most scientists believe evolution to be fact and not theory. However, there are a significant number of scientists that do not accept evolution as fact and so it is reasonable that alternative theories of origins should be examined. The journal *Industrial Chemist* reported in its February 1988 issue that a survey of what scientists accept on the subject of origins yielded the following results:

Accept Evolution	48.3%
Accept Biblical Creation	22.8%
Some combination of the two	22.8%

The definition of evolution must be examined in order to understand why there is a difference of opinion as to whether evolution is fact or not. Section 25.2 page 529 of the textbook defines evolution to be: "*The adaptation and resulting change in living things over time is called **evolution**. Evolution occurs over lengths of time and over many generations of living organisms. Evolutionary changes result*

in changes in species " If only the first sentence of this quote were the definition of evolution there would be no problem for creationists but it is not the dictionary or textbook definition as the last two sentences point out. Creationists object to the middle sentence because they do not believe that all organisms came into existence through this process. They maintain that organisms [representing kinds] appeared suddenly in their complete or present form but not necessarily as modern species. There is no consideration of the time over which changes occurred or the age of the earth Biblical creationists maintain that the earth is relatively young If the earth is young then evolution is impossible because of the great number of steps necessary for it to happen. Is there any doubt why evolutionists object to Biblical creation? The first sentence of the above definition refers to the theory of natural selection (sometimes called "survival of the fittest" or "adaptation of the species") as proposed by Charles Darwin. Natural selection has been observed and can be considered as scientific fact. Darwin believed and thus evolutionists believe that since natural selection is true then evolution must be true. In other words, if small changes in organisms occur due to natural selection [micro-evolution] then large changes "must" occur [macro evolution]. Creationists do not agree with this hypothesis

A fundamental difference between the two major theories lies in how genetic information originated in organisms. The evolutionist believes that the increasing genetic information necessary for different organisms to evolve arose by purely random chance happenings over a great period of time. This is in conflict with "information theory" which maintains that meaningful information does not come about spontaneously nor does it increase spontaneously. In contrast, the creationist believes that the complexity and information content of the genetic information is evidence that each organism must have been designed and therefore appeared suddenly in the approximate form it now appears.

INFORMATION FOR CHAPTER 24

The question of origins does not need to be addressed in this chapter but certain points and questions need to be brought out and answered so that the material in chapter 25 on evolution may be understood more easily.

The Mutation Problem

Creation scientists disagree with the conclusion of the third paragraph of section 24-8 which states, "*These mutations are responsible for evolution, or the changes in species over long periods.*" This is because creationists remember having read earlier that, "*Chromosomes may not always replicate or divide properly*" (Section 24-8, paragraph 1, sentence 1) and ask how often does this happen? They also read in paragraphs 2 and 3 that, "*Mutations are often harmful or fatal*" and "*Some mutations are actually beneficial.*" Wherein modern thinking maintain that mutations are neither beneficial nor harmful, the author's statements are certainly logical in that some mutations must be more or less harmful than others. The question that the author's statements stimulate is, "How often does a favorable mutation occur?"

It is known that duplication (replication) errors are extremely rare. Hickman¹ states that there is no more than one error in copying the entire human DNA or

genotype of about 4,000,000,000 units called base pairs. This clearly says that duplication errors do not provide an abundant source of mutations for evolutionary change. Ambrose² states that only one in 1000 mutations "*might*" be beneficial. He further adds to the complexity of the situation by saying that generally it takes about 5 mutations to make a significant physical change in an organism. A single physical change in an organism does not mean a new species has been formed. The fruit fly [*Drosophila*] has been forcibly mutated hundreds of thousands of times causing major physical changes but never has anything but a fruit fly been produced. Dodson³ estimates that it takes over 300,000 generations for a slightly beneficial *recessive* gene to increase in frequency from 1 in 1,000,000 to 2 in 1,000,000. It must also be remembered that a mutation in any cell other than in the cell involved in reproduction (the seed, pollen, egg, sperm, etc) does not have any influence on succeeding generations. When all of this is considered, the question must be asked, "How can evolution occur from processes that produce many more negative results than positive results?"

To better understand this problem consider a simple analogy. Suppose driving from Baton Rouge to Hammond (about 36 miles) is to be accomplished using the odds of 1295 to 1. This is about the same as the assumed likelihood of a beneficial mutation. Take a piece of paper and put two points on it connected by a line divided into 36 parts. You will also need two pairs of dice. Assume a favorable mutation is represented by four ones appearing when the dice are rolled. When this occurs advance one mile. Any other combination of numbers on the dice represent unfavorable or neutral mutations. The book states that some mutations are fatal so assume that any time four of any number other than one come up the organism is killed and the trip must be started over. The rest of the combinations represent unfavorable mutations which do not normally kill the organism but if enough unfavorable mutations do occur then the organism will be weakened and die. Assume this number is twenty so that if twenty rolls of the dice do not yield four ones then the organism dies and the trip must be started over. Do you think that we can ever get to Hammond? If not, then you do not think evolution can be accomplished by mutations. What is the alternative? Creation! Remember that even if you do feel you could get to Hammond that does not prove evolution because of the other problems mentioned in the previous paragraph.

The Information Content Problem

In order for a more complex organism to evolve there must be an increase in new information [genetic complexity] added to the DNA. It should be noted that an error in copying or the breaking or losing of a chromosome does not add additional information to the DNA but decreases it and so does not lead to the implied conclusion of the third paragraph of 24-8, i.e., evolution. Organisms may be destroyed or greatly deformed by errors or breakage but there is no increase in complexity. Mice living at the Chernobyl reactor show mutational changes but they and their offspring are still mice. The only way to have an increase in complexity is to have a chromosome, a piece of a chromosome, the DNA or part of the DNA of a bacterium or virus added to the existing DNA. A real problem arises when we

consider adding information to the DNA. Not only must it be added but it must be added in such a fashion that it sensibly increases information content and actually ends up describing a more complicated organism. For instance, take the last five sentences or any other group of sentences representing additional information and try to put them into this document so that they make sense and add to the meaning. To simulate evolution close your eyes and randomly select a spot to insert them. Try it. You will soon come to the conclusion that it is impossible.

We know that about one person in 750 has some form of Down's syndrome ⁴ which is caused by the addition of an additional chromosome or extra DNA to the existing DNA (Trisomy). Even though the textbook says that some of these people can become contributing members of society this is not a DNA addition that improves survivability. The chances of a random section of DNA from any source joining with the DNA of a reproductive cell (gamete) in a manner that would contribute to the functionality of an organism are impossibly small as noted in the previous paragraph.

When all of the factors just presented are considered, creation scientists do not think mutations can account for new species arising as suggested in the third paragraph of section 24-8 or for the great diversity of the gene pool which allows for the adaptation of organisms to their environment. They maintain that new species were designed for their environment with their present gene pool more or less like it is today. They do recognize that the gene pool is being modified by mutations but these changes are seldom favorable.

INFORMATION CONTENT FOR CHAPTER 25

Scientific creation can be defined as the analysis of scientific data which supports the sudden appearance of an organism in its completed form. The organism is designed in such a way as to best suit its environment and to adapt to moderate changes in the environment. Creation scientists believe that special adaptations are designed by a Creator and did not evolve as evolutionists believe.

There are very large differences between the theories of creation and evolution when their major points are compared as shown in the table below.

CREATION	EVOLUTION
DEFINITIONS	
Sudden appearance of an organism in its completed form.	The adaptation and resulting change in living things over over a long time.
ROLE OF MUTATIONS	
Usually degrades the gene pool.	The means by which new organisms appear.
DIVERSITY IN GENE POOL	
Originally designed that way. New mutations are occurring but generally are degrading the gene pool in terms of viable variations.	Occurred because of the mutation process.

ROLE OF NATURAL SELECTION OR SPECIES ADAPTATION

Does not lead to new species but rather tends to keep the existing species from changing. Can lead to new sub-species. (See discussion of natural selection p. 6).

Leads to new species and new sub-species.

FOSSIL RECORD

All of the families should be represented throughout the entire column.

Should progress from the simplest organisms in the deepest strata to the most complicated organisms in the higher strata.

DISCUSSION OF PREVIOUS TABLE

Definitions

These definitions are very far apart in concept. Creation is not dependent upon time whereas evolution cannot occur without some amount of time. Certainly the appearance of an organism in its final or complete form is very different from having it develop up to its present form.

Role of Mutations

This was discussed earlier on page 3 of this document.

Diversity of Gene Pool

The creationist believes that the ability of an organism to adapt to its environment was designed which means that the DNA sequence was designed. If the DNA was designed by a creator then it is reasonable to assume that it was perfect originally. On this basis, any mutations that occur will degrade the DNA or gene pool. The question is whether the over 4000 human disease related mutations now recognized existed from the beginning or have occurred over the years. In other words, is the gene pool deteriorating or improving? Creationists believe it is deteriorating and therefore its diversity is less now than it has been in the past. When the diversity in the gene pool is not large enough to allow the organism to adapt to new environmental conditions the organism becomes extinct.

Natural Selection or Species Adaptation

The textbook description of natural selection does not point out that species adaptation can tend to keep the status quo as well as change it. If a well established organism were to go through a mutational change that altered its physical characteristics, chances are that the mutation would weaken the organism and make it less likely to survive in its present environment. Natural selection would tend to eliminate the mutational change unless an environmental change that could use the mutational change occurred at the same time as the mutation. This means

that natural selection can nullify the effects of mutation and makes the likelihood of progress by mutation even less likely.

Natural selection is the process by which sub-species develop. If the environment changes, some of the existing species will adapt to the new environmental conditions because of the diversity in the gene pool and thus become a sub-species. For example, some of the various types of dogs are sub-species where species means the animals that can reproduce.

Fossil Record

The fossil record poses some real problems for the evolutionist. Not only are there many gaps in the fossil record but very complex organisms appear suddenly in very deep geologic strata. The second layer from the bottom of the Grand Canyon is called the Cambrian layer. It has worldwide distribution and has fossils such as the nautiloid which is a squid-like animal that is a very complex organism. Its eye is very similar to that of a human. In the same and even deeper strata are found trilobites which are highly complex organisms with unusually complex eyes that are not related to the nautiloid's eye. This means that there were two different highly complex eyes evolving at the same time - a very unreasonable assumption. The Cambrian layer contains a literal explosion of life forms with no evidence as to where they came from. Most of the phyla are represented in this strata and appear in all of the higher strata as well as the Cambrian. These facts support creation rather than evolution.

Misnamed Evolutionary Changes

An example of natural selection is given in the textbook on pages 529-530 under the title **Evolutionary Changes** when it discusses adaptations of the Galapagos tortoises. Note carefully that the Galapagos tortoises adapted and did not become a new species in the sense that they still were interbreeding. They are still tortoises - they did not evolve in the sense of molecules to man. They went through what creationists call micro-evolution and not macro-evolution. The total gene pool is probably the same as it was originally just as it is in the peppered moth of England⁵ (*Biston betularia*).

5 The peppered moth is heralded as an example of evolution but is really an example of natural selection or species adaptation. Before the industrial revolution most of the moths were a mottled gray that blended well on the tree trunks that had lichen growing on them and so were invisible to birds. The darker moths were quickly eaten by birds. With the industrial revolution came air pollution which killed the lichen on the trees and thus exposed the gray moths against the dark background of the tree trunk. The light colored moths were eaten by the birds but the dark colored moths escaped detection. These dark moths multiplied and became dominant and therefore were said to have evolved. The story concludes with the cleanup of the air and the return of lichen on the trees. The dark moths have essentially disappeared and the light colored moths have returned and become dominant. The creationist believes that the gene pool has not changed and that this is a clear example of natural selection -- the moth is the same as it always was.

The authors also suggest (sixth line from the bottom of page 530) that the giraffe neck might be the result of natural selection. A close look at the giraffe neck reveals that it is not just larger vertebrae, muscles and longer blood vessels that happened in a random manner. There are pressure sensors and regulators, valves in veins, increased muscle fiber in artery walls and by-passing structures for the blood. All of these are necessary for the giraffe to be able to live as it lowers its head to drink or graze. There is so much that must come together in the neck of the giraffe to make it functional that deliberate design seems to be the only answer. Changes in the environment cannot explain this final result.

The last paragraph on page 530 starts a discussion on the flamingo as an example of evolutionary change. The decision needs to be made whether the flamingo's beak occurred by natural selection or was it deliberately designed. The number of mutational changes necessary to accomplish this new beak from the DNA of other birds makes it obvious that design must have been involved, not mere chance happenings. The changes in the jaw necessary to have it attached to the spinal column instead of the head and the reattachment and reconfiguration of muscles and tendons necessary to control the jaw lead one to believe the flamingo's beak was created.

INTERPRETING ILLUSTRATIONS (HOMOLOGY)

Creationists object to the conclusion that since different animals have similar or homologous structures they must have a common ancestor. They object because it is an unproven hypothesis. There are many homologous structures on the cars in a parking lot such as wheels, headlights, side mirrors, body style, etc. Does this mean that they all came from a common ancestor? If the assumption were made that they could evolve, then they could be arranged in an order that would illustrate this. In other words, if you were given some criteria (size, shape, complexity, similarity, function, etc.) by which to judge things such as cars, spoons, forks, wheels, organisms, etc. you could arrange them in an order to illustrate or confirm the criteria. This is what evolution does with this argument.

Upon close examination of the animal structures presented on page 532, it should be noted that the bones, while located in the same relative location, are not the same size and do not have the same bony knobs and protrusions. This means that they are not similar after all. The information in the DNA must be very different to direct the formation of these different bone structures. Shouldn't the genes of animals with similar structures be similar if they came from the same ancestor? It was reported some time ago that similar genes do not produce the same structure in different organisms⁶. Just because a structure is serving a similar purpose in different animals does not mean that these animals all came from the same ancestor. As the text points out, there are many instances where similar structures obviously do not mean descent from a common ancestor such as the wings of birds, bats, insects, and butterflies. What determines the common ancestry of a structure? There are no logical criteria!

A further consideration regarding similar structures is whether there is another way to do the assigned task. How many ways can an appendage like a leg

that serves to support an organism be attached? One requirement is something must offer stiffness to the appendage. There are two ways to do this in a living organism - by bone and/or cartilage? Shouldn't these bones and/or cartilage look approximately the same regardless of use except for the way they are connected together? If the design is good then why shouldn't it be used in multiple applications?. This is exactly what design engineers do. Is it wrong then for a Creator to do the same thing?

IMPROVED BREEDING

The textbook suggests that selective breeding is evolution. Certainly, improved cattle and plants have been produced from man's viewpoint by man's efforts but the real question is whether this is evolution and are the supposed improved strains better able to survive and reproduce in their original habitat? For instance: Is the one meter tall crepe myrtle better able to survive by itself or does it require special care ? Are the super sweet and super size vegetables and fruits better able to survive and reproduce than their parents ? Are the beefmaster and beefalo cattle able to adapt to environmental changes as well their ancestors? Could these changes have occurred without man's intervention? Did the results of the crosses result in different families or are they still from the same family?

In most cases, these new varieties or sub species quickly become extinct if not cared for properly. They require special care because some of their gene pool has been eliminated through selective crosses Since I raised peaches commercially I know from personal experience that the peach trees which produce large peaches will quickly die if not cared for. This is in direct contrast to wild trees that I have seen flourish around an old abandoned house for years without care The selective crossing of trees for large fruit with good flavor weakens the ability of the tree to survive.

Lastly, it should be noted that selective breeding is not evolution. It is the result of deliberate, planned selection from the existing gene pool for a specific purpose and is not likely to have occurred by random chance happenings.

INCREASED RESISTANCE

The textbook statement is true when it says, *"Increasing the disease and insect resistance of a plant or an animal is usually a helpful change----- Sometimes, however, an unplanned resistance develops that has a damaging effect"* This does not mean that macro-evolution has taken place. Deliberate action was required by the scientists and so the results are not due to random chance happenings. The insects and bacteria that become immune to insecticides or medicines are still the same kinds of organisms. Some people are less resistant to certain diseases than others This does not make them a new species. Evolution has not taken place although the gene pool may have been adversely affected.

THE QUESTION OF EARLY HUMANS

Creationists do not believe the statement in the first paragraph of the textbook (Page 537) that *"humans.....have evolved from early hominids"*. As

stated earlier, they believe that all of the animals supposedly making up the ape-human lineage are individuals that first appeared much as we see them today. Creationists point out that we are back to the homology argument already discussed. Just because two animals look somewhat alike does not mean they came from a common ancestor. To point up the absurdity of this hypothesis, look at the DNA of ape and man. It has been stated recently that the DNA of ape and man are 99% the same. If only a 1% difference exists, that amounts to the amount of information contained in a book whose thickness is equivalent to about 45 *General Science* textbooks based on the human genome of eight billion base pairs⁷. Where and how did this vast amount of additional information come about? It is completely inconceivable that this much coherent information could have been accidentally added to the DNA of a member of the ape family at one time to get man. If the transition from ape to man is to be accomplished by mutations, it is apparent that there should be plenty of fossil evidence. Where is the fossil evidence?

The text presents some evidence about which there is controversy. Paleontologist Adrienne Zihlman, University of California at Santa Cruz says, "Lucy's fossil remains match remarkably well with the bones of a pygmy chimp."⁸ Evolutionists such as Charles Oxnard, Sir Solly Zuckerman, William L Jungers, Jack T. Stern, Jr, Randall L. Susman, Malcolm Bowden all concur.⁹⁻¹³ The textbook *Modern Biology* by Albert Towle¹⁴ presents two different views of human evolution (pp 261-262) which points up that the lines of descent are pure supposition. The creationist believes that each of the animals represented in these lines of descent are individuals that are not related.

AMINO ACIDS AND EVOLUTION

The statement under Procedure on page 540 that, "*The more amino acids that animals have in common, the more proteins the animals have in common, and the more closely related they are to one another*" is completely false as stated. There are only 20 proteinous amino acids and all animals have all twenty which means that the attempted comparison of members of the animal kingdom shown in Table 1 has no meaning as presented. Any conclusions drawn from this table are probably in error.

CONCLUSION

Hopefully, this brief presentation has allowed the reader to recognize that there are many good arguments and facts which support creation rather than evolution. Neither theory can be absolutely proven since they concern something that happened in the past with no living witnesses except the Creator in the case of creation. As more and more facts are uncovered in the origins area the case for creation becomes stronger and that for evolution weaker.

BIBLIOGRAPHY

1. Hickman, Hickman, and Hickman, *Integrated Principles of Zoology*, C. V. Mosby Co., (1979), p 872.
2. Ambrose, E., *The Nature and Origin of the Biological World*, (1982), p. 120-121.
3. Dodson, E., *Evolution: Process and Product*, (1960), p. 225.
4. Starr and Taggart, *Biology: The Unity and Diversity of Life*, Wadsworth Publishing Co. Fourth Ed.,(1987), p. 188.
5. See footnote on page 7.
6. G. deBeer, *Homology: An Unsolved Problem*, 1971, p. 15.
7. Hickman, Hickman, Hickman, *Integrated Principles of Zoology*, C. V. Mosby, Pub. (1979).p. 67.
8. Zihlman, "Pygmy Chimps, People, and the Pundits," *New Scientist*, Vol. 104, No.1430, Nov.1984, p. 39
9. Oxnard, *University of Chicago Magazine*, Winter 1974, p. 11
10. Zuckerman, *"Beyond the Ivory Tower,"* London: Taplinger Press, 1970, p. 78
11. Jungers, "Lucy's Limbs: Skeletal Allometry and Locomotion in Australopithecus Afarensis," *Nature*, Vol.24, June 1982, pp. 676-678.
12. Stern and Susman, "The Locomotor Anatomy of Australopithecus Afarensis," *American Journal of Physical Anthropology*, Vol.60, March 1983, pp. 279-317
13. Bowden, *Ape-Men: Fact or Fallacy*, Sovereign Publications, Bromely, Kent, BR.,1988, pp.216
14. Towle, *Modern Biology*, Holt, Rinehart and Winston, 1989.