A STUDY OF THE BIBLICAL FLOOD

Marion R. Fox

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FOREWORD

To the Second Edition

Our planet contains numerous mystifying features such as: flash-frozen animals and plants in tropical surroundings found within deep ice of the far north; thick, multiple and rapidly deposited layers of sediment as found in the Grand Canyon and elsewhere throughout the world; fossils of fast-decaying organisms extending through several different sedimentary strata; sea fossils located at the interior of continents; mountain ranges with seemingly inexplicable cause of formation; and many, many more such perplexing features. These features pose the dilemma of their cause as either (1) a single worldwide flood or (2) uniformitarianism (or even multiple catastrophes) throughout thousands of millions of years. Only one of these two can be, and *must* be, correct. Not both, not neither, but one or the other is the actual cause.

The answer to this dilemma has profound ramifications. If a worldwide flood did *not* occur, then these features developed over an extensive amount of time encompassing 4.5 billion years or more—a time necessary for promoting the theory of evolution and eliminating the concept of creation by a supernatural God. On the other hand, if a worldwide flood *did* occur how and when the Bible describes and caused these features, then: (1) the earth is young (a few thousand years), making it impossible for evolution to have occurred; (2) this is evidence of Divine inspiration of the Bible, for mere men of antiquity could not have known and wrote the obscure factors (which this book brings forth) involved in the flood; and (3) there is a creating God Who brought the flood (due to man's sin [Genesis 6]) and inspired men to record it 1000 to 2000 years later.

How, then, is it to be determined which of these two possibilities is correct? Advocates for an old age of the earth will present matters such as radiometric dating of rocks, radiocarbon dating of organisms, earth's reception of light from stars seven million light-years from earth, etc. Yet, young earth advocates present the flood (and other matters

which are scientifically established) to account for a young earth which harmonizes with the Bible and falsifies the time needed for evolution.

However, traditional scenarios of the flood advanced by young-earth and old-earth advocates (such as: local flood; rain only; rain plus reservoirs of water from beneath the surface of the earth) contain substantial problems which cannot be successfully answered. For fifty-two years, Dr. Fox labored tirelessly on this question, researching extensively in scientific journals and books, lecturing and writing on his breakthroughs, and now presents a second and updated edition of *A Study of the Biblical Flood* as he expounds his flood model—a model which is new and unique, but explains those puzzling features of the earth, fits the science, and answers the questions. Fox also exposes the old-earth advocate's acclaimed evidence for an old earth.

To one unfamiliar with Fox's flood model, this book will be quite enlightening. To one troubled by the unsolvable problems of traditional flood models, this will provide answers. To one distressed by atheistic accusations against the flood (and creation), this will furnish refutations. To one advancing claims against the flood (and creation), this may change the mind of the honest investigator. Quotations and technicalities are supplied to enable the reader to see and examine the research and evidence behind all facets of Fox's flood model, eliminating the notion for the reader to think Fox merely devised a model from imagination.

As to the author's immense educational credentials, instructional expertise, and intellectual capabilities, reading "About the Author" at the end of this book would prove most impressing.

Most of what I would like to have written in this forward had already been said in the 1st edition. Instead of appearing to plagiarize, I requested Dr. Fox to include it in this expanded 2nd edition and I recommend it to your reading.

I predict Fox's flood model, upon readers comprehending how it fits earth's numerous puzzling features mentioned above, will emerge as the academically accepted model of the flood.

Gary R. Henson
Oklahoma City, Oklahoma
February 14, 2025

FOREWORD (to the first edition)

A Study of the Biblical Flood is true to its title. This volume is an investigation of the causes and effects of the Genesis Flood.

Marion Fox received his Baccalaureate and Doctorate Degrees from Oklahoma State University. He received his Master's Degree and Advanced Certificate in Electrical Engineering Technology from the University of Illinois. His majors are in: Electronic Engineering Technology, Mathematics, Electrical Engineering, Physics, Education, Bible, and Greek.

With 29 years experience as a professor in electronic engineering technology, mathematics, and physics he understands research. With full research facilities, the author utilizes them to the utmost.

The author is a faithful preacher of the gospel, a respected professor at Rose State College in Midwest City, Oklahoma, and is director of Oklahoma City School of Biblical Studies. He is qualified in both the biblical and the scientific realms to write on this subject.

Plausible and probable causes involved in the effects of the Flood are clearly and forcefully presented by the author. His incisive manner of dealing with the difficult is refreshing.

Although there are many volumes dealing with the Genesis Flood, most of them leave several unanswered questions. This volume offers the answers.

The author makes interesting uses of arguments advanced by evolutionists and ATHEISTS. Trained in logic, the author uses sound and true arguments.

Many attempts have been made to explain some effects of the Flood such as frozen animals with fresh plants in their mouths. Marion Fox offers the most probable cause for this effect ever read by this penman.

Answers offered in this volume agree with Scripture, science, and are logically correct. We are convinced that multitudes will rejoice when they observe the simplicity and soundness of the trenchant arguments offered in this volume.

Although science and scientific arguments are used freely by Marion Fox, he writes in simple enough terms that serious students can easily understand and appreciate this book.

Many of the volumes dealing with the Genesis Flood have a well-deserved place in the affections of Bible believing people. It is our conviction that **A Study In The Biblical Flood** will take its place alongside the very best of the others, if not surpassing them all.

This volume deserves the most widespread use possible by those who wish to better understand the biblical account of the Genesis Flood. Our sincere wish is that all lovers of Truth diligently read it.

Charles A. Pledge
Sheridan, Wyoming
August 21, 1997

DEDICATION:

I wish to dedicate this book to my wife Linda and my children Brent, Marcey, and Melanie, and my grandchildren: Ashley, Alexis, Adison, Alyvia, Iian, Abbey, Owain, Ella, Evynne, my great-granddaughter Harper, and my great-grandson Swade who have been a source of joy to me.

ACKNOWLEDGEMENTS:

I would like to express my appreciation to the late Charles Abernathy, Sam Coleman, the late Willard Cox, my twice-brother – Wayne Fox, Jerry Gore, Gary Henson, Randy Kea, and the late Bennie Henson for spending their valuable time to read the rough draft of the first edition of this book and to suggest changes. I also appreciate Bobby Gayton, Gary Henson, Christopher Hill, Gary Smith, Richard Smith, James Taylor, and Thomas Wessel for reading the rough draft of the second edition and suggesting changes. These good men are responsible for some of the good points in this volume. I accept full responsibility for any errors in this treatise.

I appreciate Debbie Kea reading the draft of this treatise (1st edition) and suggesting corrections in both sentence structure and punctuation.

I appreciate the late Lansing Robertson drawing several charts for me. His work is greatly appreciated because it provides visual images for the reader that help to clarify several concepts.

I appreciate both Gladys Patterson and Gilbert Gough helping me to format the draft of the first edition of this treatise.

PREFACE

I will be using the following acronyms in this volume: (1) FFM – Fox Flood Model, (2) AAOEC – atheist, agnostic, and/or old Earth creationist, and (3) AAOECGM – atheist, agnostic, and/or old Earth creationist geologic model.

The thoughts and interpretations of various passages of the Scriptures contained in this brief treatise are those of the author. They are not necessarily endorsed by any other person referred to in this treatise. These thoughts have been a result of many years of study. This author began teaching this "flood model" (the FFM) in 1973 while he was preaching for the Lord's church in Mountain View, Oklahoma.

A number of scientists, many of whom are probably either atheists or agnostics, have been quoted. This author has consciously attempted to refrain from quoting known theists,[1] as much as possible, when making scientific arguments. The *first* reason this was done was to eliminate the possibility of someone making the charge that "biased sources were quoted." The *second* reason this was done is to make it into an *ex concesso* argument.

The reader should not think that any person being quoted in this book agrees with the overall thrust of this treatise. This author has attempted to draw from a bevy of experts in various fields of science in order to synthesize all the information available and draw the conclusion that most closely explains all the facts.

In addition, when there are competing theories held by different AAOEC each group will provide good evidence against the other theories. The reader should remember that each group may offer arguments for a competing theory. This is generally true unless there is no competing theory to the AAOEC view except the theistic view. It is the opinion of this author that, if all other factors are equal, a biblical theist will make a better scientist than either an atheist or an agnostic.

It is the belief of this author that the Word of God is infallible (inerrant) and that a proper understanding of the Scriptures will enable the Christian to answer the AAOEC on this or any other subject. The author admits that his worldview is

[1] Those who believe in God – in this treatise it is the God of the Bible.

monotheistic. The author believes the Scriptures are inerrant and has developed his worldview around this doctrine. This material has been prepared with the intent that it might be used to build faith in God. The author does not claim that his interpretations are inspired by God.

The author appeals to any and all who shall read this material to consider the whole treatise as a unit. The material has been prepared as a systematic study of this subject and should be covered in the order in which it has been arranged. Failure to deal with this treatise as a complete unit could result in lifting it out of context and causing results not intended by the author. This author prays that everyone who might disagree with his conclusions would give them due consideration before doing so. He desires that everyone would follow the admonition of Solomon in Prov. 18:13: **He that giveth answer before he heareth, it is folly and shame unto him**.

The material has been designed for high school, college, and/or adult age students and because of the content will not be suitable for most junior high or younger students. Some scientific arguments have been included in this book which may not be understood by all the readers. The reader is encouraged to simply skip the section in which the argument is found and continue studying the book. Most of these arguments support one point and other points can be understood without understanding either the math or the scientific argument.

A glossary has been included which defines a number of scientific, theological, and philosophical words. If a word is only found once in this Volume the definition is placed in a footnote, but if it is found more than once it is found in the glossary. The reader is encouraged to consult the glossary as unfamiliar words are encountered. For example, the philosophical term *worldview* and the mathematical term *order of magnitude* are defined in the glossary. Both of these terms are found in several of the quotes that are in this treatise.

In addition, a topical index has been included in this treatise. This should enable the reader to locate all pages where some critical topics are discussed in this treatise.

All Scripture references are from the American Standard Version (ASV) unless otherwise noted. This author has chosen to capitalize the word *Scripture* even though some English grammarians do not do so. Since the word *Bible* is capitalized and the word *Scripture* is equivalent to the word *Bible* this author has capitalized it also. The words Sun, Earth, Moon, Mercury, Venus, etc. have been capitalized when used by this author, but have been left in the lower case in quotes which had lower cases since there is no uniformity of usage in this matter in the writers quoted by this author.

If a source quoted by this author used **bold**, *italicized*, underlined, etc. print this author has attempted to retain that print in quotations. This author has not inserted any special print into quotations.

This treatise is designed to demonstrate that there is abundant evidence (both biblical and extra-biblical) for the occurrence of the flood of Genesis 6-9. The author contends that this flood was universal in nature. In addition, several other factors are developed in this treatise. The first chapter sets forth how I synthesized the information to write this book. Chapters two through five are designed to lay the groundwork for the remainder of the book. Chapter 6 sets forth some of the antediluvian conditions on the Earth. Chapter 7 relates these antediluvian conditions to both the existence and demise of dinosaurs. Chapters 8 and 9 develop the mechanism that God used to bring about the flood and the ice caps. This mechanism is determined by a synthesis of the Scriptures, science, and facts of nature. Chapter 10 gives an explanation of how both the mechanism which brought about the flood and the effects of the flood cause both earthquakes and volcanoes. Chapter 11 is designed to answer a number of questions which are often asked with regard to this matter. Chapters 12 through 14 are designed to demonstrate that much of the system of modern

geology is flawed and that the Earth is quite young (a few thousand years old). Chapter 15 relates to events which transpired shortly after the flood. These events are derived entirely from a synthesis of the facts of nature with the laws of science. Chapter 16 summarizes the book and ties it into one unit. Chapter 17 deals with factors that affect the health of humans. These factors explain the reduction in longevity of post-flood (postdiluvian) mankind. Chapter 18 deals with the Scientific Method and applies it to the Fox Flood Model. Appendix A deals with the chronology of the LXX (Septuagint – Greek translation of the Old Testament). Appendix B deals with the record of the postdulivian patriarchs in Josephus, The Samaritan Pentateuch, and the LXX (Septuagint). Appendix C contains information that is used by skeptics who claim that it was not possible to construct a sea-worthy wooden vessel the size of the ark. Appendix D contains information about organic macroevolution. Appendix E contains information about bias among some scientists.

Note: I will be referring to a system of geology as uniformitarian geology in this treatise. I recognize that many modern-day geologists have rejected Lyellian uniformitarian interpretations. Shea (cf. the quote on page 19) calls the most prevalent view today the *modern uniformitarian* geologic interpretation. Gould calls Lyellian uniformitarianism *substantive uniformitarianism* (cf. the quote on page 20). Gould calls modern uniformitarian geology *methodological uniformitarianism* (cf. the quote on page 20). Gould is continuing the same rhetorical trick (*equivocation*) employed by Lyell (cf. the quote of Alvarez *et al.* on pages 23-24). Dott calls the new geologic view *episodic* (cf. the quote on page 22). I would label modern uniformitarian geologic interpretations as *punctuated uniformitarianism* because they usually retain what Gould calls *substantive uniformitarianism* for what happens between catastrophic events. When I claim to refute uniformitarianism in this volume, I am claiming that I have refuted both *Lyellian uniformitarianism* – what Gould calls *substantive uniformitarianism* and what I call *punctuated uniformitarianism*.

In addition to this volume, I have published a volume on logic (*Logic and Debate for Christians,* 2024). This volume will help the reader to see the principles of sound reasoning that I have employed in this present volume. I have not found any arguments made by AAOEC to be sound – they contain logical fallacies in their reasoning.

Reasons for Developing Scientific Arguments

I developed the difference between faith and sight (empirical knowledge) in Fox, 2024 (2 Cor. 5:7). I will also develop this difference in this volume. The atheist/agnostic intelligentsia have defined *faith* as something we cannot be certain about: "… firm belief in something for which there is no proof …" (Merriam Webster). I discuss this thoroughly in Fox 2024. These same intelligentsia will act as if scientific knowledge (empirical knowledge) is absolutely true, when it is not.

These intelligentsia make bold-sweeping claims about how a worldwide flood contradicts scientific evidence. In logic, if two things are contradictory, one is true, and the other is false – both cannot be true and both cannot be false.

These intelligentsia may use the word *contrary* instead of the word *contradicts*. In logic, if two things are contrary, both cannot be true, but both could be false.

Many AAOEC are sophists – often because they are ignorant of how to reason properly, and they are parroting unsound arguments they have heard. Some AAOEC are probably dishonest and are cunning in their attacks upon the Scriptures.

A young Christian will almost certainly have his faith attacked by AAOECs when he goes to an institution of higher learning in the western world. These attacks will probably center around the first 11 chapters of Genesis. Having an understanding of the scientific proof of the flood (in this volume) only half-prepares a young person to face the onslaughts that he will face when his faith is attacked. Young

people need two things: (1) scientific evidence and (2) to know how to reason – both deductively and inductively. This volume serves the first need and Fox 2024 serves the second need. I also recommend that the young person study: Barker, Copi, Hurley, and/or Fox 2024 to prepare himself to both know how to reason soundly and how to recognize unsound reasoning. My volume (Fox, 2024) deals with these matters explicitly. William McGuire's *Inoculation Theory* or *Psychological Inoculation Theory* explains how we can prepare our youth for these onslaughts. Copi has an excellent discussion of the scientific method.

The curriculum of the following college majors are full of atheistic-sophistic arguments: Anthropology, biology, philosophy, psychology, sociology, etc.

NOTES FOR THE READER

The biblical references are to the American Standard Version (ASV) unless otherwise noted. The King James Version is abbreviated (KJV). The Septuagint (Greek translation of the Old Testament) has been referred to with the abbreviation Sept. and is designated as the "LXX." The New King James Version is abbreviated (NKJV). The New American Standard Version is abbreviated (NASB). The New International Version is abbreviated (NIV). The New Revised Standard Version is abbreviated (NRSV).

The reader should note that several aids have been included in this volume. The *first aid* is 5 appendixes that deal with several matters in more detail than would be proper in the text of the book. Some of the appendixes make application of the principles of logic that are in this book to biblical matters. The *second aid* is a glossary in which many of the words that might be unfamiliar to the reader have been defined. If you encounter a word that you are uncertain of its meaning, consult the glossary – it might be defined in the glossary. The *third aid* is a Scripture index that has been included at the end of the book. The *fourth aid* is a topical index.

The author legally changed the spelling of his last name from *Fuchs* to *Fox* in 1975 (The name *Fuchs* [pronounced *fooks* – it rhymes with the word *books*] is German for *Fox*). Marion has preached for the Barnes church of Christ in Oklahoma City, Oklahoma since 1978. He formerly preached for churches in Mountain View, Oklahoma and Maysville, Oklahoma.

Marion has taught at the Elk City School of Preaching (Elk City, Oklahoma), Westside School of Preaching (Duncan, Oklahoma), Oklahoma School of Bible and Preaching (McLoud, Oklahoma), Great Plains School of Bible and Preaching (Elmore City, Oklahoma), Online Academy of Biblical Studies (Dyersburg, Tennessee), Rocky Mountain Audio and Video Bible Institute (Sheridan, Wyoming), and presently serves as director of the Oklahoma City School of Biblical Studies in Oklahoma City, Oklahoma.

ADDITIONAL INFORMATION

Mathematics Concepts

A mathematical shorthand called "powers of ten" is used throughout this Volume. Two different types of powers of ten are used in engineering and science. The *first* type of power of ten notation is "scientific notation." Scientific notation entails the writing of the number as a number greater than or equal to 1 and less than 10 times the appropriate power of ten. The *second* type of power of ten notation is "engineering notation." Engineering notation entails the writing of the number as a number greater than or equal to 1, but less than 1,000 times a power of ten that corresponds to a metric prefix (cf. Table 1 [below]). This system is quite simple if two simple rules are observed.

First, if the power of ten is positive, the decimal point should be moved to the right the number of the power of ten. For example, $2.5 \times 10^3 = 2{,}500$ and $1.66 \times 10^5 = 166{,}000$. In both instances the decimal point is moved the number of places equal to the power of ten (the exponent).

Second, if the power of ten is negative, the decimal point should be moved to the left the number of places equal to the power of ten. For example, $2.5 \times 10^{-3} = 0.0025$ and $1.66 \times 10^{-5} = 0.0000166$. In both instances the decimal point is moved the number of places equal to the power of ten (the exponent).

Metric Prefixes/Conversion Factors

The authorities quoted in this Volume use both the metric and English system of units. It is anticipated that the readers will include persons who use both systems of units. In order to facilitate the reading of this book the following conversion factors will be helpful to the reader:

Table 1
Metric Prefixes

PREFIX	ABBREVIATION	MEANING
Mega	M	1,000,000
kilo	K	1,000
centi	c	1/100
milli	m	1/1,000
nano	N	1/1,000,000,000
pico	P	1/1,000,000,000,000

Several different metric prefixes are used in this Volume. These prefixes are listed in Table 1. A knowledge of these prefixes will aid the reader to understand the metric terminology.

Several different units are used in this Volume. The reader should be familiar with these in order to read (with understanding) the quotes in this Volume. Table 2 (below) lists the length conversion factors which will be helpful to the reader.

Table 2
Conversion Factors

Centimeters	Inches	Feet	Meters	Miles
1	0.3937	0.03281	0.01	6.21×10^{-6}
2.540	1	0.08333	0.0254	1.58×10^{-5}
30.48	12	1	0.3048	1.89×10^{-4}
100	39.37	3.281	1	6.22×10^{-4}
1.609×10^{5}	63,360	5,280	1,609	1

Additional Terminology

Several words have different meaning in the United States and other parts of the world. For example, the word "billion" in the USA means "1,000,000,000," but in some other parts of the world it means "1,000,000,000,000." The usage of the metric prefixes (cf. Table 1) alleviates this problem. In the USA numbers are set off by commas (*as in the prior sentence*), but in some other parts of the world spaces are placed where we use commas.

In addition, the spelling of various words is different in "American English" and "British English." For example, the British word "vapour" is the same word as the American word "vapor." The author has retained the spelling without change in quotes of various sources.

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DEVELOPMENT OF FOX'S FLOOD MODEL

CHAPTER ONE

INTRODUCTION

In the next eighteen chapters of this volume, I will develop the flood model (FFM)[2] that I believe is the most reasonable interpretation of how God brought about the flood. The Scriptures link several things with the flood.

I encourage the reader to study my treatise *Logic and Debate for Christians* to get a good understanding of how to reason. I discuss both deductive and inductive reasoning in this treatise and in most of my other volumes. In addition, I discuss *the scientific method* fairly thoroughly in this treatise.

QUESTIONS OF EPISTEMOLOGY

Epistemology is the branch of philosophy that relates to the questions of how and if we know things. I have for many years taught that we know things in three ways: (1) by our senses, (2) by reasoning, and (3) by evaluation of evidence.

It is essential that we determine how we will approach the problem of determining how the flood (of Genesis 6-9) occurred. Let me first begin by setting forth the ways that we know anything that we know. Let us consider the three ways that any man knows anything.

Empirical Knowledge

First, we know things by sight (2 Cor. 5:7) or by one or more of our senses. This is called *empirical knowledge* by philosophers and scientists. All scientific knowledge is *empirical knowledge*. This is, by definition, what scientific knowledge is all about. All scientific knowledge is based upon inductive reasoning. Therefore, it is based upon probability and cannot

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[2] The Fox Flood Model

be 100% certain when it is applied to the physical realm.

Scientific knowledge is tentative: "Hypotheses always remain hypotheses, that is, suppositions to the complete certainty of which we can never attain." (Kant, Immanuel – as quoted by Medawar, p. 41) Lee wrote:

> Because all scientific statements must be considered at best only tentatively correct, the phrase "scientific proof" should be used with extreme caution in scientific discussions. Strictly speaking, nothing in science is truly proved. (p. 19)

Note also what a committee of physics professors wrote:

> No scientific theory, no matter how strongly supported by available evidence, is final and unchallengeable; any good theory is always exposed to the possibility of being overthrown by new observational evidence. (Committee, p. 11)

Note also:

> Few propositions of science are directly verifiable as true. In fact, none of the important ones are. ... Every explanation in science is put forward tentatively and provisionally. Any proposed explanation is regarded as a mere hypothesis, more or less probable on the basis of the available facts or relevant evidence. ... The vocabulary of "hypothesis," "theory," and "law" is unfortunate, since it obscures the important fact that all of the general propositions of science are regarded as hypotheses, never as dogmas.
>
> ... As a hypothesis, the question of its truth or falsehood is open, and there is a continual search for more and more evidence to decide that question. The term "evidence" as used here refers ultimately to experience; sensible evidence is the ultimate court of appeal in verifying scientific propositions. Science is empirical in holding that sense experience is the test for all its pronouncements. Consequently, it is of the essence of a scientific proposition that it be capable of being tested by observation. (Copi, pp. 463-465)

Note also:

> Scientific truth in the sense I shall describe and explain it below is often thought of as the goal of a scientist's work, though "asymptote" would be the better word, for there can be no apodictic certainty in science, no finally conclusive certainty beyond the reach of criticism. There is no substantive goal; there is a direction only, that which leads toward Ultima Thule, the asymptote of the scientist's endeavors, the "truth." (Medawar, p. 5)

Medawar quoted Peirce: "… the conclusions of science make no pretense to be more than probable." (Peirce, Charles Sanders, - as quoted by Medawar, p. 41) Some scientific evidence has been tested sufficiently that it is treated as a law. Scientific laws are treated as being certain because of the high probability of them being true.

It is most evident that scientific (empirical) knowledge is tentative knowledge. Science only deals in tentative knowledge.

Knowledge Derived from Deductive Logic

The *second* way we know things is by reasoning. Mathematics is a form of deductive reasoning. For example, let us remember a fact that can be proven for Euclidean geometry: The three interior angles on any triangle ($\angle$A, $\angle$B, and $\angle$C) always form a straight line. Since a straight line is a 180° angle, we can use this information to solve for unknown angles. For example, let us assume that we know two of the three interior angles of a triangle. If we know two of the angles e.g. $\angle A = 40°$ and $\angle B = 60°$, we can easily determine by simple algebra that $\angle C = 80°$. It should be evident that our knowledge of the value of $\angle$C is only as accurate as our knowledge of the true values of $\angle$A and $\angle$B. If we have the correct value for $\angle$A, but have an incorrect value for $\angle$B, we do not know the correct value for $\angle$C. We do not derive new truth by logic (or reasoning) but see old truth that was hidden from us.

For the triangle of the preceding paragraph, we made three assumptions that must all be true to be certain of our answer:

First, we assumed that we were neither using Riemannian (elliptical)[3] geometry nor hyperbolic geometry[4], but we were using Euclidean geometry. *Second*, we assumed that we can prove that the sum of the three interior angles of a triangle (in Euclidean geometry) will form a straight line.[5] *Third*, we assume that we know (with certainty) the values of two of the three angles. If these three assumptions are true, we can know (with certainty) the value of the third (unknown) angle.

Knowledge derived from deductive reasoning is only as certain as the information that we use in our reasoning. If the information used in the reasoning (including mathematics) is certain, the resulting conclusion is certain. If the information used in the reasoning is uncertain, the resulting conclusion is uncertain.

Knowledge Derived from Faith

We can either walk by faith or by sight (2 Cor. 5:7). Faith is knowledge derived from evidence (Heb. 11:1). The Greek word that is translated: *evidence* (KJV) is ἔλεγχος pronounced *elenchos* – verb form ἐλέγχω (pronounced – *elenchō*).

> *Elencho*, however, is a much more pregnant word. It means to rebuke another with the truth so that the person confesses, or at least is convicted, of his sin (Job 5:17; Prov. 19:25). This is also the case in juristic Greek, where *elencho* is not merely to reply to but to refute an opponent. (Trench, p. 30)

ἔλεγχος "[ἐλέγχω] **1.** *a proof, that by which a thing is proved or tested …* **2.** *conviction*" (Thayer, p. 202) With this Greek word, the writer of Hebrews is telling us that faith is certain.[6] Most English-speaking persons do not know the biblical

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[3] Bernhard Riemann

[4] Bolyai, Lobachevsky, and Gauss.

[5] This assumption is neither true in elliptical nor in hyperbolic geometry.

[6] Note that faith enables us to "understand" (νοέω "*to perceive with the mind, to understand*." (Thayer, p. 426) "In accordance with the usage of the *koine* νοέω means in the NT 'to perceive,' 'to note,' 'to grasp,' 'to recognize,' 'to understand,' …" (Kittel, Vol. IV, p. 950)

definition of the word *faith*. Most people use the word *faith* as a synonym of the word *think*. People say: "I believe" when they mean: "I think, but I am not certain." This is a most unfortunate mistake in the definition of the biblical word *faith*. There are a few verses that appear to use the word *faith* (Greek πίστις pronounced "*pistis*") as something of which we are uncertain, but these passages can be interpreted differently.

The Three Methods of Knowing Contrasted

Let us compare the three ways that we know things: (1) by our senses, (2) by reasoning, and (3) by evaluation of evidence. Knowledge is either absolute or it is tentative (not absolute). Of these three ways of knowing things, both empirical (scientific) knowledge and some knowledge derived from deductive reasoning are tentative (not absolute) knowledge. (Remember that deductive reasoning is only as certain as the information that we use in the reasoning.) The modern-day adage relating to a computer is correct: "Garbage in, garbage out."

Since science is tentative and deductive reasoning depends upon other sources (it does not give us new truth and it may be tentative, but it may not be tentative), either we do not have absolute truth or faith is absolute truth. If faith is tentative truth, then we do not have absolute truth. This conclusion is true, unless there is a fourth method of knowing truth. The educational system (in the United States and most of the Western world) has been teaching that absolute truth does not exist. John Dewey and his *progressive education* philosophy is the source of this false doctrine (that absolute truth does not exist – that the only way we know anything is by science). I have a more extensive discussion of this in my treatise *Logic and Debate for Christians*.

Since faith is absolute truth, it is irrational to allow scientific knowledge (tentative truth) to trump (veto or nullify) our knowledge derived from the Scriptures by faith (absolute truth). Therefore, I will start with the Scriptures to set the

parameters for our study of the flood.

INFORMATION USED TO DEVELOP A SOUND FLOOD MODEL

Information Derived by Faith (from the Scriptures) About the Flood

There are, at least, sixteen absolute truths that are derived from the Scriptures: (1) there was a curse of the ground related to the flood (Gen. 8:21). (2) It rained for 40 days and nights (Gen. 7:4, 12, 17). (3) The fountains of the deep were breaking up for 150 days (Gen. 7:11 and 8:1-3). The waters did not decrease until after the 150 days and there was a wind during the flood. (4) The windows of the heavens were open for 150 days (Gen. 7:11 and 8:1-2). (5) The flood waters did not abate for 150 days after the flood began (Gen. 8:3). (6) There was a decrease in the longevity of mankind after the flood (Gen. 9:29, 11:10-26, etc.). (7) Mankind was able to marry close relatives both before and for a period of time, after the flood without having genetic problems (Gen. 9:19). Any sound universal flood model must have all humans descending from Shem, Ham, and Japheth. Most local flood models will not conform to this requirement (among other requirements). (8) Mankind ceased to be able to marry close relatives about 1,000 years after the flood (Lev. 20:17). Atheistic organic macroevolution (cf. Appendix D) requires inbreeding of both humans and animals in order to bring about additional organisms, but inbreeding of mutated organisms is detrimental (with our present conditions – inbreeding results in homozygosity which tends to reduce the fitness of that group of organisms to survive).[7] Even cross-breeding – which often has positive effects can suffer from a reduction in fitness to survive.[8] This reduction in fitness could be due to the introduction of new mutations in the group. (9) Planetary phenomenon were associated with the flood (Amos 5:7-9). (10) There was no rain before the flood (Gen. 2:5-6). There are two different words translated *rain* in these passages. It is possible that there was

[7] This is called *inbreeding depression*.
[8] This is called *outbreeding depression*.

water rain for 40 days and something else rained for a longer period. (The word *rain* is used for several different things falling in the Old Testament [Gen. 19:24, Ex. 9:18, 16:4, etc.].) (11) There was no rainbow before the flood (Gen. 9:12-17). (12) There probably were no clouds before the flood (Gen. 9:13). (13) Ice, snow, and cold were not mentioned before the flood. (14) Storms (including lightning), earthquakes, and volcanoes were not mentioned before the flood. (15) Mountains were raised during the flood (Ps. 104:5-9). (16) The destruction that occurred during the flood will not be repeated (Gen. 8:21-22).

Whatever flood model is developed must conform to these 16 (and perhaps other) factors derived from the absolute truth of the Scriptures. I do not believe that prior flood models have conformed to the requirement that they must conform to these sixteen absolute truths. The following must also be followed in order to be rational: (1) the parameters for all sound flood models will be the Scriptures. (2) There is no need to conform any flood model to any theoretical hypotheses of scientists. (3) Empirical hypotheses, which are more certain, should be used to develop the flood model.[9]

The following are examples of some other laws of science to be used in developing any reasonable flood model are: (1) Laws of physics such as the law of gravity, Coulomb's Law of electric field attractions, Faraday's Laws of electromagnetics, etc. can be used. (2) Other laws such as Henry's Law, Boyle's Law, Pascal's Law, Archimedes' Principle, etc. can be used.

Various Facts of Nature Must be Used to Develop a Sound Flood Model

There are a number of facts that we can observe in nature that must be used in developing a sound flood model: (1) Both the Earth and the Moon are cratered. These craters of the Earth and Moon might or might not be linked with the flood. Ice in the craters of the Moon might or might not be linked with the flood. There are three distinct rings of craters around the

[9] For a more thorough discussion of the distinction between theoretical and empirical hypotheses refer to: Hurley (pp. 533-536).

Earth. Seismographs have determined that these three rings of craters are filled with sedimentary rocks and then the next ring is above the lower craters. (There is sedimentary rock both above and below these three rings of craters.) If all of the sedimentary rocks were deposited during the flood, these craters must have been created during the flood and their existence might give clues to deriving a sound flood model. (2) The Earth has extensive evidence of erosion by water (Grand Canyon, sedimentary rocks, etc.). (3) Mountains have sedimentary rocks on them (even at the tops of the mountains). (4) The oceans have not been filled with sediment. (5) There are extensive ice caps in Greenland, Antarctica, and elsewhere. (6) There are some parts of the northern polar regions that do not have sedimentary rocks. (7) The magnetic field (poles) of the Earth is not aligned with the geographic poles. (8) The magnetic field (the poles) of the Earth wanders. (9) The core of the Earth turns faster than the remainder of the Earth. (10) Plants and animals were frozen during times when fruit was ripe in the northern hemisphere (during late July or early August). Neither the fruit nor the leaves on these frozen trees dropped off. (11) The continents float on the mantle (extremely hot rock that is thought to flow from heat convection). (12) Cloud droplets condense on the molecules of a sulfurous gas (dimethyl sulfide). Dimethyl sulfide is a major contributor to cloud formation – other factors are salt, dust, and volcanic ash. (13) There are fossils in the sedimentary rocks in the interior of the continents. These fossils are both marine, aquatic, and terrestrial fossils. (14) There are animal tracks in some of the sedimentary rocks. (15) There are sand dunes in some of the sedimentary rocks (evidence of wind erosion). (16) There are rocks called *mudstones* in some of the sedimentary rocks. (17) There is iridium and other platinum group metals in some of the sedimentary rocks and in the ice of Antarctica and Greenland. (18) There is evidence of volcanic activity coincident with the deposition of sedimentary rocks. (19) There is extensive archeological evidence that the continental shelves were inhabited by humans in the past. These archeological sites are as deep as 300 or more feet below sea level. (20) There are tektites in several different layers of the sedimentary rocks. Izokh links tektites with ice. (21) There

is charcoal, soot, and kerogen in the sedimentary rocks, (22) There are some parts of the ocean floors that have no sedimentary rocks, (23) There are seamounts in various parts of the oceans. (24) These seamounts are on the opposite side of the Earth to a crater in the Earth. (25) There is evidence of worldwide fires in the upper layers of the surface of the Earth.

AN OVERVIEW OF THE METHODOLOGY USED TO DEVELOP THE FOX FLOOD MODEL

In any study of this nature there are two parts to the study: (1) We must analyze the information (break it down into parts to see each part). (2) We must synthesize the information (put it all together into a coherent system – the FFM).

In developing my flood model (FFM), I used the following methodology in my analysis: The *first* thing done was to assemble as much information as possible from the Scriptures. It was recognized that the Scriptures are absolute truth and science is tentative truth. Under no conditions should science be allowed to trump (nullify, override, cancel, or veto) any sound interpretation of the Scriptures. If there are two or more plausible interpretations of a passage of Scripture, then science may be used to determine which of the interpretations is the most plausible. Science was not used to determine an answer to a question until sound hermeneutics was first applied to the Scriptures and an exhaustive search of the Scriptures was made.

The *second* thing done in my analysis was: Both science (empirical hypotheses [including laws and principles of science] were applied) and the facts of nature were then brought to bear on the issue. The facts of nature were given priority over science. The laws of science and principles (e.g. *Archimedes Principle*, *Principle of Uniformity*, *Henry's Law*, etc.) were given priority over empirical hypotheses. Empirical hypotheses were given priority over theoretical hypotheses. The last aspect of science that was considered was theoretical hypotheses.

The *third* thing done in my analysis was: The objections of those who deny that the flood occurred were taken into account and every attempt was made to develop a model that would answer their objections. In answering the objections, the first thing considered was conformity with the Scriptures. In answering the objections, the second thing considered was conformity with the facts of nature that are observed (sedimentary rocks, mountain ranges, fossils in rocks, etc.). In answering the objections, the third thing considered was conformity with the laws of science, principles of science, and reasonably verified hypotheses (empirical hypotheses) were used (in the order given above). Less credence was given to empirical hypotheses and almost no credence was given to theoretical hypotheses.

In developing my synthesis of the information, the facts were then synthesized (assembled into a whole) and a model consistent with all the facts and not conflicting with anything said in the Scriptures was developed – the FFM. (1) This author read the writings of a number of other authors who had written on the flood (both for and against a universal flood). Some ideas were probably borrowed from other writers (this was not a conscious borrowing of ideas). Comments by various people with whom this author has come into contact also shaped the FFM. (2) The FFM was tested by presenting it to a number of people (some friendly to the idea of a universal flood and some unfriendly to the idea of a universal flood). This occurred both before the 1st edition was printed and after it was printed. This author engaged in an informal debate (over the internet) on the content of the book and was able to add more information to the FFM (the model was refined as a result of the debate). As with any scientific model, this model is subject to modification as more information is obtained by the author.

CONCLUDING REMARKS

Any systematic study of a matter that requires different sources of information to determine the truth on the matter requires both an analysis and a synthesis of the information.

It also requires that we rank the truth by the degree of certainty. If we attempt to synthesize truth derived from the Scriptures with science, we must follow the procedure set forth in this treatise.[10] My flood model (FFM) conforms to these requirements. It is unfortunate that some brethren have allowed science to trump (veto) or nullify the Scriptures.

[10] This is true since the Scriptures are inerrant.

WHY STUDY ABOUT THE FLOOD?

CHAPTER TWO

Introduction

One of the first attacks of modern atheism[11] (any system that denies the existence of God) upon biblical theism (the belief in the God of the Bible) was the attack made by geologists upon the veracity of the biblical account of the flood. Is the Bible correct when it records a flood? If the Bible is right when it gives an account of a flood, what was the nature of the flood? What were the conditions that caused the flood? What were the antediluvian conditions upon the Earth? When did the flood occur? What effects did the flood have upon the Earth and all living things?

The Importance of This Study

The Christian has an obligation to be set for the defence of the gospel (Phil. 1:16-17). Christians are to be ready to give an answer to every man, including the AAOEC (1 Pet. 3:15). The same word translated *defence* (Phil. 1:16-17) is translated *answer* (1 Pet. 3:15). This Greek word is ἀπολογία (pronounced *apologia*) and from this word comes the modern word "apologetics." ἀπολογία "(see ἀπολογέομαι), *verbal defence, speech in defence*" (Thayer, p. 65)

Also, one must note that ignorance is not a Christian grace. Hosea reveals that God's people were destroyed because of a lack of knowledge (Hos. 4:6). Hosea refers to a knowledge of the Word of God. Since Genesis 6-9 is a part of the Word of God one should study it and not remain ignorant. Some have said, "I already understand all I need to know about that subject." Such a statement is either evidence of ignorance or arrogance. The Scriptures are like a bottomless well from which one can continue to draw new facts and information. The despising of instruction is a mark of a fool (Prov. 1:7 and

[11] Atheism supposedly based upon science.

12:1). Even those who say that the atheist and/or the agnostic will never destroy their faith should rejoice in the richer and fuller understanding of the Word of God. These should rejoice because they are then better able to strengthen the weak and perhaps convert the atheist/agnostic. Some Christians fail to realize that God has not inspired their interpretations of the Bible.

Others consider those who do not accept the Bible as the truth to be beyond the reach of the gospel. If the twelve apostles would have done this and taught others to do this, only the Jews and a few Gentiles would have become Christians. This follows because the Gentiles were never under the law of Moses (Ex. 20:1-2, Deut. 5:1-6, Rom. 2:14, etc.) and generally rejected the truths of the Old Testament Scriptures. One must note that the vast majority of the people in the world do not believe that the Bible is the Word of God. Even in the United States the majority reject the infallibility of the Holy Writ.

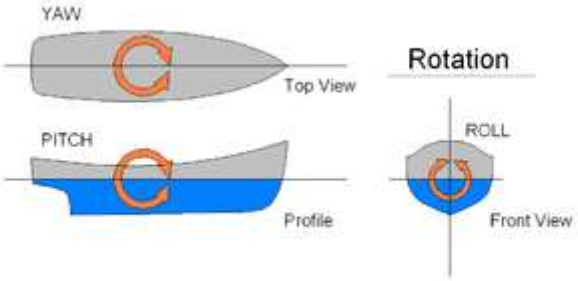
Common Errors on the Biblical Flood

There are several errors concerning the flood which are commonly espoused by people. Some people think the flood lasted for forty days. The Scriptures, in fact, reveal that the flood lasted over one year (Gen. 7:11 and 8:13). Many do not know that seven clean animals were taken into the ark (Gen. 7:2). Keil and Delitzsch state: "Noah received instructions from Jehovah to enter the ark with his family, and with the animals, viz., seven of every kind of clean animals, and two of the unclean." (p. 144) Most think that the expression *windows of the heavens* refers to the rainfall, yet the rainfall lasted for forty days (Gen. 7:4) while the windows of the heavens lasted for 150 days (Gen. 7:24-8:3). Most view the ark as being designed like a modern sailing ship, but this is not set forth in the Holy Scriptures. The word *ark* means "*a chest … a coffer*" (Gesenius, p. 855) or "*a wooden chest, box*." (Thayer, p. 346) The ark was designed to float, not to be sailed since the Scriptures do not mention a rudder. This author envisions the ark as resembling a giant shoe box (rectangular) made of gopher wood with tar (pitch) on the inside and outside. It was

a rectangular prism (a cuboid). Since the ark was covered with pitch it was probably black in color (Gen. 6:14). The ark had three stories or floors (Gen. 6:16). Some have attempted to replicate the ark, but all that can be obtained from the Scriptures is the general shape of the ark.

Many have drawn "models" of the ark and most of the time it is depicted as a streamlined ship. Streamlining of the ark was not necessary because it was only designed to float, and God (by providence) guided the movement of the ark. Streamlining the ark would have two possibly detrimental effects: (1) it would reduce the volume of the ark and (2) it would cause the wood to have to be bent when the ark was built. The bent wood would tend to leak when the roll, pitch, and/or yaw of the ship occurred. Wood that was straight would not tend to leak when the ship experienced roll, pitch, and yaw.

Rotations Around the Three Axis of a Ship



Some skeptics (atheists, agnostics, etc.) have claimed that it is not possible to construct a 450 feet long wooden vessel that is seaworthy. This question is addressed in Appendix C.

The most seaworthy dimensions for a ship are 30 × 5 × 3 (Gen. 6:15). This has been verified by marine engineers in their laboratories (Hong, et al., pp. 105-137).

Can This Subject be Understood?

Every passage of Scripture must be understandable by man, otherwise the Bible is not from God. It is out of harmony with God's purpose to give man something that is impossible to

understand. Since everything in the Holy Scriptures is understandable, it is not wrong to try to understand any passage of the Holy Writ. This author realizes that the secret things belong to God (Deut. 29:29). But this very verse says that the revealed things have been given to man. The flood has been revealed and some of the figurative language employed in God's revelation about the flood has not been understood by some Christians. The two figurative expressions that are not understood are: *The windows of the heavens* and *the fountains of the deep*. This author realizes that the failure of some Christians to explain these phenomena does not make his explanation to be correct. It does obligate the honest person to weigh the evidence both for and against the explanation this author gives.

Necessary and Sufficient Conditions

Copi defines a "necessary condition" as: "A *necessary* condition for the occurrence of a specified event is a circumstance in whose absence the event cannot occur." (Copi, p. 399) The following illustration will illustrate the difference between a necessary condition and a sufficient condition: In order to be a citizen of the state of Texas one must also be a citizen of the United States (this is a necessary condition). It is not sufficient to be a citizen of the United States because one could be a citizen of another state and still be a citizen of the United States. In order to be a citizen of the United States it is sufficient that one be a citizen of the state of Texas (since all Texas citizens are U.S. citizens).

Copi defines a "sufficient condition" as: "A *sufficient* condition for the occurrence of an event is a circumstance in whose presence the event must occur." (Copi, p. 400) In the prior paragraph the citizenship of Texas was discussed. It would be sufficient to be a citizen of Texas for one to be a citizen of Houston, Texas. This is true because all Houston citizens are Texas citizens. I suggest that the reader acquire a good logic book (Hurley, Copi, and/or Fox, 2024) that elaborates on these points.

The atheist[12] has charged that the first eleven chapters of Genesis are erroneous (a myth). He alleges that there was no flood. His points are of a critical nature since either man came into existence by chance or he was created. Since any belief that man was created necessitates a Creator, the AAOEC must have man resulting from mere chance. This requires the theory of macro-organic evolution or some other *spontaneous generation* theory. An atheist Stokes recognized this dilemma:

> Louis Pasteur demonstrated that spontaneous generation of this type is impossible. Pasteur's ingenious experiments and clear-cut results are still hailed as triumphs of the scientific method[13] over mysticism and superstition. His conclusion that no type of spontaneous generation is possible has proved to be shortsighted, premature, and somewhat of an embarrassment to succeeding scientists. If we discount the theory of spontaneous generation entirely, then the only alternative is supernatural creation. There are no other possibilities. Science therefore finds itself reexamining the possibility of spontaneous generation … On the basis of present evidence, we know that living material apparently can originate only from previous living material, but there is a possibility that it might rarely arise by some other method. Science is not seeking the spontaneous generation of fully formed organisms such as man but only of the simplest of living entities. (p. 218)

The theory of organic macroevolution (cf. Appendix D) requires long periods of time to accomplish the end result. Long periods of time are a necessary condition (cf. p. 15) for organic macroevolution to occur, but not a sufficient condition for organic macroevolution to occur. Badash states:

> As the sun's first rays of thermonuclear light blazed across the galaxy 4.5 billion years ago, the primal earth emerged from a spinning, turbulent cloud of gas, dust and planetoids that surrounded the new star. During the next 700 million years the cloud settled into a more tranquil solar system,

[12] One who denies the existence of God.
[13] The Scientific Method will be discussed in more detail in Chapter 18.

and the sun's third planet began to solidify.

On these figures for the age of the earth rest all of geology and evolution. (p. 90)[14]

Wald states:

The important point is that since the origin of life belongs in the category of at-least-once phenomena, time is on its side. However improbable we regard this event, or any of the steps which it involves, given enough time it will almost certainly happen at least once. And for life as we know it, with its capacity for growth and reproduction, once may be enough.

Time is in fact the hero of the plot. The time with which we have to deal is of the order of two billion years. What we regard as impossible on the basis of human experience is meaningless here. Given so much time, the "impossible" becomes possible, the possible probable, and the probable virtually certain. One has only to wait: time itself performs the miracles. (p. 12)

Even the new theory called *punctuated equilibrium* requires long periods of time (cf. Eldredge and Gould, pp. 82-115). AAOEC geology and organic macroevolution are both stored in the broken cistern of a 4.5-billion-year-old Earth.

The theory of organic macroevolution (cf. Appendix D) also requires that the early atmosphere of the Earth be void of free oxygen (O_2). Dott and Prothero state:

But if life does not arise from nonlife today, how did it arise in the first place? At first this seems a paradox, but one critical factor had not been mentioned: spontaneous generation does not occur *under present earth conditions* because the earth's modern atmosphere is too corrosive and too oxidizing to allow it. (Just think how quickly iron objects rust when exposed to air and moisture.) The early atmosphere had almost no free molecular oxygen and was

[14] Badash is admitting that a 4+ billion-year-old Earth is necessary for organic macroevolution to occur.

> rich in the right kinds of chemicals to produce life. Under these conditions, the odds of life beginning change from impossible to highly favorable. Once life arose, it would use up all the nutrients and change the environment so radically that a second spontaneous origin would be impossible. (pp. 196-197)

Most AAOEC (cf. the quote of Cloud, pp. 52-53) agree that organic macroevolution (spontaneous generation – abiogenesis) could not occur with extensive amounts of free oxygen in the atmosphere.

Uniformitarianism or Catastrophism?

Only two basic systems have been postulated to explain the geological formations of the Earth. The Bible proposes a system of catastrophism in which sudden catastrophic events have shaped the face of the Earth. The word *catastrophe* is derived from the Greek word καταστροφή (pronounced *katastrophē*). The word καταστροφή means: "*ruin, destruction*." (BAG, p. 420) The word *cataclysm* is derived from the Greek word κατακλυσμός (pronounced *kataklusmos* [Mt. 24:38-39; Lk. 17:27; and 2 Pet. 2:5]) and the verb form κατακλύζω (pronounced *katakluzo* [2 Pet. 3:6]). The word κατακλυσμός means: "*flood, deluge*." (BAG, p. 412) In the early 19th century a system known as *uniformitarianism* was proposed as the AAOEC alternative to biblical catastrophism.

It is evident that the theory of macroevolution (cf. Appendix D and Fox, 2024, Appendix P) would require that geology support this theory with long periods of time in which the Earth experienced slow changes in the surface. This system of geology is called *uniformitarianism* (sometimes called *actualism* or *gradualism*). Charles Darwin[15] came under the influence of Charles Lyell prior to the formation of his ideas concerning the theory of organic macroevolution. Lyell popularized the theory of uniformitarianism which had originated by James Hutton and others before him. Actually,

[15] Darwin was a geologist who advocated Lyellian uniformitarianism.

Hutton developed a comprehensive theory of uniformitarian geology but was a poor writer. Hutton was a deist – so he denied that God had intervened after He created the Universe. This means that he could not believe in the flood. The fact that the flood of Genesis 6-9 occurred destroys the theory of uniformitarianism and its stepchild (organic macroevolution). This also defeats atheism as well since man must have been created rather than a result of mere chance which, of course, implies a Creator. Shea states:

> Furthermore, much of Lyell's uniformitarianism (…), specifically his ideas on identity of ancient and modern causes, gradualism, and constancy of rate, have been explicitly refuted by the definitive modern sources, as well as by an overwhelming preponderance of evidence that, as substantive theories, his ideas on these matters were simply wrong. Thus, modern uniformitarianism is not Lyellian uniformitarianism. (p. 456)

It is interesting that Shea (p. 456) admits that the very arguments that swayed large numbers of people against catastrophism (the biblical flood [cf. p. 18]) are now known and admitted to be unsound. These arguments were advanced with much confidence by the AAOEC geologists in the 19th and early 20th centuries, but they "were simply wrong." (Shea, p. 456) Is it not possible that the arguments being advanced in the early 21st century will also be proven to be "simply wrong" in the 22nd century?

Stephen Gould (1965), by a stipulative definition of uniformitarianism, subdivides the term into two divisions. His *first* subdivision is called *substantive uniformitarianism*. (1965, p. 224) His *second* subdivision is called *methodological uniformitarianism*. (1965, p. 224) Gould defines *substantive uniformitarianism* as "a belief in uniformity not only of rates but of material conditions themselves." (1965, pp. 223-224) Gould defines *methodological uniformitarianism* as "uniformity that asserted the invariability of natural laws in space and time." (1965, p. 224) That group of modern AAOEC scientists who deny uniformitarianism usually deny what Gould calls *substantive uniformitarianism* and not what he calls *methodological uniformitarianism*. Gould discusses

these subdivisions and states:

> … they remain logically distinct because we may formulate a theory of *natural* catastrophic change that denies substantive uniformitarianism but which, as any scientific theory, must affirm methodological uniformitarianism in requiring that the agents of change be empirically verifiable. (1965, p. 224)

Gould is claiming that *substantive uniformitarianism* is contrary to the facts.

> Substantive uniformitarianism as a descriptive theory has not withstood the test of new data and can no longer be maintained in any strict manner … Moreover, too rigidly held, this or any other testable theory is transformed into an *a priori* assumption, stifling to the formulation of new hypotheses which may better explain certain data. (Gould, 1965, p. 226)

Uniformitarianism is directly opposed to catastrophism. Catastrophism is the doctrine that the Earth was shaped by catastrophes which have occurred in the past (cf. p. 18). Not all the scientists who assert that the surface of the Earth was shaped by a catastrophe are believers in God. However, many are believers in God. It is interesting that a number of AAOEC scientists are presently claiming that the dinosaurs were killed by the effects of an impact by an asteroid which hit the Yucatan peninsula and formed the Chicxulub crater (Jueneman, p. 21).

> Another important major impact is thought to have been where the Yucatan Peninsula is nowadays. This impact spread iridium and glass for hundreds of miles around the impact site and is currently thought by some scientists to be the cataclysmic event that wiped out the dinosaurs and many other terrestrial life forms at that time. (Burgess, p. 38)

This claim of an impact which spread iridium and caused the extinction of the dinosaurs has been disputed by Elliot, *et al.*

> Assuming the Ir[16] spike represents fallout from a bolide[17]

[16] Iridium.

[17] Either a large meteorite, an asteroid, or a comet.

> impact, effects of this impact were superimposed on environmental and biotic changes already occurring during the Maastrichtian[18] … The responses of the Seymour Island macrofauna and some microfossil groups … to environmental change in this well-exposed, apparently complete section make it an important site for understanding the K-T[19] event. Seymour Island provides no compelling evidence for mass extinction at the K-T boundary. (p. 678)

The Ir spike is the sudden increase in iridium and other elements in the soil. This could easily be explained by other phenomena which will be developed in this book. These elements discussed are normally present in cosmic phenomena (comets, asteroids, meteorites, etc.). "Iridium is common in meteoritic material but rare on Earth." (Hecht, 1990, p. 31) Hecht discusses several objections to the iridium being produced by an asteroid (p. 31). This is an implicit rejection of uniformitarian geology and amounts to an acceptance of the underlying principles of catastrophism (cf. p. 18).

At the Fifth North American Paleontological Convention in 1992 catastrophism was advanced as an explanation for all extinctions (or at least most of them).

> There was nothing shy about the meeting's opening plenary speaker. To an audience generally skeptical of things extraterrestrial, paleontologist David Raup of the University of Chicago proposed an "extreme-and-seemingly ridiculous-hypothesis": that comet and asteroid impacts are responsible for almost every burst of extinction of the past 600 million years, from the five mass extinctions down to the blips of extinction that recur every million years on average. (Kerr, 1992, p. 486)

This demonstrates that even some AAOEC are beginning to adopt the view that the Earth was shaped by catastrophes

[18] Maastrichtian: A geologic period of time (from uniformitarian geology).

[19] The abbreviation K-T (some authors use K/T) refers to the Cretaceous and Tertiary periods of uniformitarian geology. These layers of sedimentary rocks were laid during the latter stages of the flood.

rather than uniform, slow, unchanging processes (Lyellian uniformitarianism). These AAOEC have not become theists, but they have rejected the underlying principle behind AAOEC geology – uniformitarianism.

Dott objects to the usage of the word *catastrophic* and proposes the word *episodic* instead:

> And some important sediments, such as uniform shale sequence and beach sands, reflect ordinary processes of modest magnitude and short recurrence intervals.
>
> What do I mean by "episodic sedimentation"? Episodic was chosen carefully over other possible terms. "Catastrophic" has become popular recently because of its dramatic effect, but it should be purged from our vocabulary because it feeds the neo-catastrophist-creation cause. … I hope I have convinced you that the sedimentary record is largely a record of episodic events rather than being uniformly continuous. My message is that episodicity is the rule, not the exception. (p. 16)

While Dott may choose the word *episodic* rather than the word *catastrophic* it really does not change the fact that his interpretation of some geologic evidence is *catastrophic*.

The debate between *catastrophism* and *uniformitarianism* is discussed by Monastersky:

> Initially, the Alvarez hypothesis walloped scientists almost as hard as the Cretaceous cataclysm itself would have. The idea had such a drastic effect because it challenged one of the most revered tenets of geology and evolutionary biology – a concept of gradual change known as uniformitarianism.
>
> Championed by Charles Lyell in 1830, this doctrine supplanted the once-popular theories that cast ancient catastrophes such as floods and volcanoes as the major architects of change on Earth. Uniformitarianism teaches that the history of the world has been shaped by the same slow processes that can be seen today wearing away mountains or replacing one species with another. Because

> no one has ever witnessed a planet-wrenching impact, uniformitarians regarded such events as outlandish explanation for past extinctions.
>
> …
>
> Although paleontologists have known about these biological turning points since the early 1800's, the reign of uniformitarianism thinking predisposed[20] them to explain away the mass extinctions as gradual transitions foreshortened by gaps in the fossil record. (1997, p. S20)

Is There a Uniformity of Laws of Nature?

God ordained that the Universe be created with certain laws to govern it. These laws are uniform throughout the entire Universe. The *principle of uniformity* states that these laws are uniform for the Universe. These laws were used by the Holy Spirit in the Scriptures to predict various events (Mt. 16:2-3). Each organism reproduces after its own kind (Gen. 1:11-12 etc. [cf. pp. 96-97]). These laws can be used in both a postdictive and predictive manner. However, these laws cannot set aside miracles or catastrophic events, such as special creation (Genesis 1-2) or the flood of Genesis 6-9. Just as Jesus was the Lord of the sabbath (Mt. 12:8), He is Lord of the Universe (and could override the laws of the Universe when He deemed it necessary to perform a miracle).

The reader should not confuse the principle that the laws of nature are uniform (*principle of uniformity*) in the Universe with the theory of uniformitarianism. This is a familiar ploy of the AAOEC when he attempts to bring in the theory of uniformitarianism on the coattails of the *principle of uniformity*. Alvarez *et al.*, say:

> It is a widespread view among geologists that uniformitarianism, as developed by Charles Lyell in the first half of the nineteenth century, provided an essential antidote to biblically inspired *ad hoc* catastrophism in the eighteenth and nineteenth centuries. However, Gould (…) has also shown that this interpretation does injustice to the

[20] This is evidence of their bias (MRF). Cf. Fox, 2024 – Appendix V.

> scientific catastrophists. He also points out that Lyell used the rhetorical trick of giving the same name to the very different concepts of substantive and methodological uniformitarianism, in order to push a rigidly gradualistic view of geological processes which can now be seen to be far from correct. (p. 15)

What they are saying is that their admittedly unsound methodology and arguments served their purpose (to destroy faith in the Scriptures). Now, Alvarez *et al.*, wish to set aside some of these unsound arguments to adopt a *scientific catastrophism viewpoint*. To bolster the *scientific catastrophism viewpoint* Shea says:

> We now realize that Earth has *evolved* and that at least some past conditions and processes were quite different from those of today. However, this does not stop us from proposing reasonable, though unobserved, processes to explain geologic features, such as astroblemes,[21] whose natural formation has not been observed … The idea that the rates or intensities of geologic processes have been constant is so obviously contrary to the evidence that one can only wonder at its persistence.[22] Yet, many authors still maintain that this is a basic part of uniformitarianism, and therefore, of geology. (p. 457)

By proposing *reasonable, though unobserved, processes to explain geologic features* Shea is implicitly rejecting *empiricism*. *Empiricism* is "the practice of relying on observation and experiment especially in the natural sciences." (Merriam-Webster, p. 379)

Uniformitarianism Prophesied

Peter prophesied that unbelievers would willfully forget that the flood occurred (2 Pet. 3:1-7). Peter says:

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[21] Astroblemes are impact craters (This word was coined by Robert Dietz in the August 1962 issue of *Scientific American*. This word originally referred to terrestrial impact craters, but it has begun to be used for impact craters on other objects – other planets or on moons.).

[22] It probably persisted because of their bias (MRF). Cf. Fox, 2024 – Appendix V.

> [3] … mockers shall come with mockery, [4] … saying, Where is the promise of his coming? For, from the day that the fathers fell asleep, all things continue as they were from the beginning of the creation. [5] For this they wilfully forget, that there were heavens from of old, and an earth compacted out of water and amidst water, by the word of God; [6] by which means the world that then was, being overflowed with water, perished. (2 Pet. 3:3-6)

When the unbeliever says "all things continue as they were from the beginning of the creation" he is advocating the doctrine of *uniformitarianism*. The account of the flood serves as a warning to mankind that God is Sovereign in the Universe and He will punish the wicked.

Logical Fallacies Committed by AAOEC

Some AAOEC claim that the extinction of dinosaurs occurred at the K-T boundary and that a bolide impact occurred at that time. From this they conclude that the impact of some object (a bolide – either an asteroid or a comet) caused the extinction of the dinosaurs. This line of reasoning follows the following logical form:

> First Premise: If a bolide impact caused the extinction of the dinosaurs, then there was a bolide impact at the time of the extinction of the dinosaurs. (This is axiomatic.)
>
> Second Premise: There was a bolide impact at the time of the extinction of the dinosaurs.
>
> Conclusion: A bolide impact caused the extinction of the dinosaurs.

This argument is logically invalid (it has the logical fallacy of *affirming the consequent*). In addition, the following fallacy (*post hoc fallacy*) is committed:

> The fallacy of **false cause** is called **post hoc, ergo propter hoc** in Latin, – which means "after this, therefore because of this." This fallacy results when someone assumes that because two events are related in time, the first one causes the second one. This cause-and-effect fallacy is very common. (Troyka, p. 140)
>
> Science is ultimately concerned with identifying cause-

> and-effect relationships. Since such relationships are always correlated, there is a strong tendency to reverse the process and infer cause-and-effect status between two or more variables based on an established correlation coefficient. The danger is clear: *correlation does not necessarily imply causation.* Two variables simply may be correlated with a third variable, as in the case of a positive correlation between water temperature and the incidence of drownings along the coast of California. It is incorrect to conclude that warm ocean water is more dangerous and the explanation lies in the obvious fact that more people go swimming when the water is warm, an activity increasing the exposure factor. (Isaac and Michael, p. 196)

Concluding Remarks

It seems obvious that God gave the account of the flood in order to combat such theories as the uniformitarian theory. The flood helps to account for the geological formations which one can observe such as most sedimentary rocks, coal, limestone, and fossils. The geological formations which exist can be readily explained by the great flood of Genesis 6-9. No doubt some sediments were deposited prior to (antediluvian) and after the flood (postdiluvian). The amounts deposited before and after the flood were probably minuscule when compared to those deposited during the flood. The action of Gen. 1:9-10 could have formed sedimentary rocks; if so, these rocks would not have any fossils in them.

Summary

In order to battle atheism, the Christian must have the proper interpretation of the first eleven chapters of Genesis (including the questions set forth by this author on the flood).

Of the two systems, *uniformitarianism* and *catastrophism* (cf. p. 18), strict uniformitarianism[23] (what Jay Gould calls *substantive uniformitarianism*) is being rejected by many

[23] Lyellian uniformitarianism.

AAOEC scientists. This rejection amounts to a desertion of the arguments used to disprove biblical catastrophism in the 19th and early 20th centuries. These AAOEC are moving closer to the truth as found in the Word of God by their desertion of substantive uniformitarianism. We will see that many AAOEC will resort to substantive uniformitarian arguments (principles)[24] as we develop the Fox Flood Model (FFM). I refer to their system when they resort to uniformitarian arguments between catastrophes as *punctuated uniformitarianism*.

[24] They will explicitly reject uniformitarianism but will make uniformitarian assumptions in their argumentation. Their uniformitarian assumptions will be constancy of rates (using linear extrapolation in their arguments). I refer to this as *punctuated uniformitarianism*.

USING EXTRA-BIBLICAL INFORMATION IN BIBLE INTERPRETATION

CHAPTER THREE

Introduction

This Chapter will consider the question of what information, external to the Bible, is to be used in interpretation of the Bible. Both AAOEC and some young-Earth creationists have difficulty in interpretation of the Scriptures because they do not employ a systematic technique in Bible interpretation. It is the conviction of this author that the Bible is the most reasonable book that has ever been written (cf. Rom. 12:1-2). I establish this in my volume *Logic and Debate for Christians*.

Some extra-biblical sources of information are: (1) Maps, which are helpful in tracing such events as Paul's missionary journeys, the wilderness wanderings of the Israelites, or the Babylonian captivity. (2) The knowledge of ancient customs that can be gained from ancient writings or archaeology. This knowledge helps one understand certain passages such as: The parable of the virgins (Matthew 25) or the parable of the marriage feast (Matthew 22). For example, the reason why God withheld the rain in Israel (1 Kgs. 17:1-18:46) is not immediately evident to one who has not studied from other sources. The idol Baal was the god of the weather (Alexander and Alexander, pp. 15, 221, 235, and 267), and therefore Jehovah withheld the rain in order to demonstrate that Baal had no power. (3) The usage of logic, both inductive and deductive, to evaluate the information is also helpful in biblical interpretation. I have developed both deductive and inductive logic in my book (*Logic and Debate for Christians*). (4) The usage of the grammar and syntax of the original languages to better understand the Bible. (5) The usage of Bible dictionaries to understand the meaning of Bible words.

Extra-Biblical Information and Inerrancy

What Christian would reject the evidence from the scientific

accuracy of the Bible as proof of the divine origin of the Bible (Heb. 11:1)? For example, the means of diagnosing leprosy (Leviticus 13) is completely accurate, according to modern physicians. Moses affirmed, by inspiration, that women possess a reproductive seed (Gen. 3:15). This truth was not generally accepted until recent times (after the microscope was discovered). Prior to the invention of the microscope the medical establishment taught the *preformation theory* which held that semen was merely tiny humans. This view asserted that the woman provided a fertile place for the tiny humans to develop. Of course, this view is false. Cf. Fox, 2024 – Appendix K. When the *preformation theory* reigned in medical science, many AAOEC skeptics claimed that the Bible had an error in Gen. 3:15.

The geologic accuracy is evident from Gen. 11:3 and Ex. 2:3 because of the discovery of petroleum in the regions of Egypt and Iran (Persia). Likewise, the skeptic once questioned the Scriptures which speak of copper (brass KJV) in Palestine (Deut. 8:9). But copper has been located in this area in modern times.

The Lord referred to the discernment of the skies (Mt. 16:2-3) and appealed to this scientific truth as an example. Meteorologists accept the truthfulness of the Lord's statement in this passage. Shipman, Wilson, and Todd discuss this passage of Scripture – explaining the scientific (meteorological) principles involved in the Lord's words (p. 602).

It is the conviction of this author that the proof of the accuracy of the Scriptures (geographic, historical, etc.) demonstrates that it was written in the time frame that the Bible claims it was written. If the Scriptures were written in the times they are purported to have been written, the prophecies of the Scriptures are conclusive proof of their inerrancy. Some prophecies, such as those of the book of Daniel, are so detailed that the atheist, agnostic, and skeptic must either admit that God exists or the book of Daniel was written after the events occurred. These arguments on the accuracy of the Scriptures

(geologic, geographic, etc.) are evidences that make the prophecies to be inescapable evidence of the existence of God. This is true because only God can know the future – cf. Fox, 2024, Appendix K.

Extra-Biblical Information and Prophecy

The prophecies of the book of Daniel are obscure to one who does not know the history of the people of: Babylon, Media, Persia, Greece, and Rome.

One can also better understand the animosity between the Jews and Samaritans (Jn. 4:9) from a study of history. Cf. 2 Kgs. 17:24-41, Ezra 4:1-24, Neh. 4:1-2, and Lk. 9:52-56 for background material on this animosity. Note what Josephus wrote about this animosity (Joseph. *Antiq.* 11.340-341; 12.257).

Josephus gives an eyewitness account of the destruction of the city of Jerusalem which confirms much of Matthew 24, Mark 13, Luke 21, and other passages.

Consider some rules of interpretation which should be followed in using extra-biblical evidence and information to help interpret the Bible. *First*, God cannot lie (Tit. 1:2 and Heb. 6:18) and God created the Universe (Gen. 1:1) and also sustains the Universe by natural laws. *Second*, since He caused the Bible to be written (2 Pet. 1:20-21), His Word cannot contradict a law of nature or a fact which results from His control of all things.

This author heard a member of the Lord's church say that man would never go to the Moon because it was not God's will that he should do so (he gave no proof-text). His interpretation of whatever passage he may have used was not correct because man has gone to the Moon. God's Word cannot contradict God's natural laws without making God to be a liar. It therefore follows that any true law of nature or fact of nature can be properly used in the interpretation of the Scriptures. For example, the Scriptures command that circumcision was

to be done on the eighth day after birth (Gen. 21:4) which is the safest time to perform this surgery (Holt and McIntosh, pp. 125-126).

Facts, *laws*, and *theories* are confused by some people. Christians are not obligated to conform their interpretation of the Scriptures to a theory of man, only to the facts. It is a fact that man has gone to the Moon, but it is a theory concerning how God created the Moon. The man who stated that man would not go to the Moon is obligated to change his interpretation of the Scriptures to conform to that fact. But on the other hand, one is not obligated to conform his ideas and interpretation of Genesis 1 to the theories of man on how the Universe was formed (*big bang theory*, *steady state theory*, etc.).

Why Oppose Error?

But someone may question the necessity of trying to understand these matters. It must be noted that ignorance of the Word of God destroys the people of God (Hos. 4:6). All the Scriptures are profitable (2 Tim. 3:16-17).

It is a good work to oppose error, any error, even if another Christian teaches it. Any allegation that the Scriptures contradict a law or fact of nature is an error and must be opposed by all Christians. Note 1 Pet. 3:15 and Phil. 1:16-17 for instructions on defending the faith. The truth does not have anything to lose by close scrutiny. Only error will lose by close scrutiny. The archaeologists' spade and scientific experiments are friends of the truth, not enemies.[25] The discipline of mathematical probability clearly demonstrates the foolishness of organic macroevolution (Ps. 14:1 [cf. Appendix D and Fox, 2024, Appendix P]). It is the truth that makes man free (Jn. 8:32), that sanctifies man (Jn. 17:17), and that saves man (Rom. 1:16-17). Without a love for the truth, man will be lost (2 Thess. 2:10).

[25] We are – of course – assuming that the archeologist and scientist are both honest and rational.

The Usage of Science to Interpret the Scriptures

The Nature of Science

Science is the knowledge of truths obtained by the empirical method.[26] There are several assumptions upon which science is based: (1) Nature is understandable. (2) All nature is subject to the same laws (the *principle of uniformity* is true [cf. p. 23]). (3) Measurable causes underlie observable effects (for every effect there is a sufficient cause). (4) The simplest explanation is probably the correct one. (5) The unfamiliar is explainable in terms of the familiar by analogy.

There are several basic steps employed in the scientific method: (1) The primary basis of all scientific thinking is observation. (2) The problem is stated and defined. (3) An hypothesis is given to explain the problem. (4) Predictions are made from the hypothesis by deductive reasoning. (5) Experiments are performed in order to test the hypothesis. (6) From the experiment either a theory or a law is formed.

All scientific theories have five basic things in common: (1) A good theory identifies orderly relationships of various and diverse observations. (2) A good theory predicts future outcomes. (3) A good theory is modifiable. (4) A good theory can be used to develop new direction for additional research. (5) The experiment can be replicated.

Limitations of the Scientific Method

There are six basic limitations in obtaining knowledge by means of the scientific method: (1) The scientific method is limited to what can be observed with one or more of the five senses (sight, smell [we can smell different things], hearing, touch [pressure, heat, cold, pain, etc.], and taste [sweet, sour, bitter, etc.]).[27] (2) The scientific method is limited to the present time. (3) The scientific method is limited to telling how

[26] By the senses.

[27] There are at least two more senses: (1) balance and (2) proprioception (body position).

a process works, rather than telling why a process works. (4) The scientific method is limited in that it is *amoral* (non-moral). (5) The scientific method is limited in that it cannot deal with the unique (a one-time occurrence).[28] (6) The scientific method is limited in that it does not obtain absolute truth (cf. Committee – below). Cf. Chapter 18 for more information about the scientific method.

> No scientific theory, no matter how strongly supported by available evidence, is final and unchallengeable; any good theory is always exposed to the possibility of being overthrown by new observational evidence. (Committee, American Journal of Physics, p. 11)

The hypothesis postulated by the scientist might be slanted by the biases of the experimenter (cf. Fox, 2024, Appendix V). In many instances there are several possible explanations of the phenomenon being observed. A theistic scientist will tend to interpret the phenomenon with his theistic worldview and the AAOEC scientist will tend to interpret the phenomenon with his AAOEC worldview. Monastersky (1997) admits that uniformitarian geologists have allowed their worldview to bias their thinking (cf. the quote on pp. 23-24).

Epistemology

Knowledge is obtained in three ways: (1) by the scientific method (either explicitly used or implicitly used), (2) by consideration of evidence (by the same method used in a courtroom), and (3) by deductive reasoning. The *second* method is called *faith* in the Scriptures (Heb. 11:1 KJV). Most historical knowledge is based upon this method of obtaining knowledge. The *third* method is frequently employed in mathematics. For example, it can be proven that the three interior angles of a triangle make a straight line (180°) in Euclidean geometry. If the sum of two of the interior angles in a triangle is 120°, the third angle must be 60°. This kind of reasoning is also employed in deductive logic.

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[28] Limits "1," "2," and "5" obviously rule out creation of the Universe from the realm of science – creation of the Universe cannot be observed.

Some scientists deny that knowledge can be obtained by the last two ways. This is called *scientism*. This was the philosophical basis for the philosophical system of John Dewey[29] which has been foisted upon the American educational system by professors teaching educational philosophy to schoolteachers. Dewey had to redefine reasoning (logic) as being limited to *The Scientific Method* because his arguments were deductively unsound. John Dewey rejected deductive logic and claimed that we only know by inductive logic.

> It is rather that these developments in the sciences, if men were agreed upon fundamentals, would have led, as they have in the philosophy of John Dewey, to a new conception of reason rather than to a loss of faith in reason. (Stanley, 1967, p. 56)

Rules for Using Extra-Biblical Information

Some rules for using extra-biblical evidence in Bible interpretation are: (1) the evidence must not be a theory but must be verified (with the exception of miracles) and (2) if the interpretation is out of harmony with the extra-biblical evidence, then either the extra-biblical evidence is not a fact or law of nature, or the interpretation is erroneous. The Scriptures are not in error; rather the interpretation is in error. The AAOEC will probably assert that this author has *begged the question* (assumed what he is obligated to prove) by this assumption. The following argument demonstrates that this is not *begging the question* – a form of *circular reasoning*:

> First Premise: If the Bible is totally accurate both historically and geographically, then it was written in the time frame in which it claims to have been written.
>
> Second Premise: The Bible is totally accurate both historically and geographically.
>
> Conclusion: The Bible was written in the time frame in which it claims to have been written.

The conclusion of this argument becomes the second premise of the following argument.

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[29] Pragmatism.

First Premise: If the Bible was written in the time frame in which it claims to have been written, then the predictive nature of the prophecies prove the Bible is from God.

Second Premise: The Bible was written in the time frame in which it claims to have been written.

Conclusion: The predictive nature of the prophecies prove the Bible is from God.

This argument has been established in other writings (Fox, 2024 etc.), and therefore this author is reasonable to use this truth in his interpretation of the Bible. The historical, geographical, scientific, medical, etc. accuracy of the Scriptures proves they are from God. This follows because only God can know the future, know medical principles that are thousands of years ahead of their time, etc.

The Fallacy of *Denying the Antecedent*

Many of the arguments made for claims of errancy in the Scriptures are of two different forms, the first one being: If *s* then *n*, not *s*, therefore not *n*. This argument contains the logical fallacy of *denying the antecedent*. The following argument illustrates this fallacy:

First Premise: If atheist S. J. Gould has climbed Mount Everest, then Mount Everest exists. (This is axiomatic.)

Second Premise: Atheist S. J. Gould has not climbed Mount Everest. (This premise is also axiomatic.)

Conclusion: Therefore, Mount Everest does not exist.

Both the first and second premises are true (for the atheist Stephen Jay Gould) in this hypothetical syllogism, but the conclusion is not true. Some of the arguments of those who claim the Bible is errant are of this form. They argue the following:

First Premise: If Christian "X" can give an answer to the question of how plants and animals with symbiotic relationships survived the flood, then the flood could have occurred. (This premise is axiomatic.)

Second Premise: Christian "X" cannot give an answer to the question of how plants and animals with symbiotic relationships survived the flood.

Conclusion: Therefore, the flood could not have occurred.

The argument contains the fallacy of *denying the antecedent* (cf. Copi, p. 295). This fallacy can be summarized in the following statement: "Absence of evidence is not evidence of absence." This logical fallacy was committed for a number of years in the form of the following argument:

First Premise: If there is evidence that the Hittite nation existed, then the Hittite nation existed. (This premise is axiomatic.)

Second Premise: There is no evidence that the Hittite nation existed. (This was true until 1886, if we discount the Bible.)

Conclusion: The Hittite nation did not exist.

Linked with this unsound argument was the following argument:

First Premise: If the Hittite nation did not exist, then the Bible is errant. (This premise is axiomatic.)

Second Premise: The Hittite nation did not exist (This is the unsound conclusion of the prior argument).

Conclusion: The Bible is errant.

It is evident that the Hittite nation existed,[30] and the conclusion of the first hypothetical syllogism is unsound. In this argument the first hypothetical syllogism is invalid – it contains the logical fallacy of *denying the antecedent*. The second hypothetical syllogism is valid (properly constructed) but it is unsound because the second premise is untrue. This argument also contains the logical fallacy of *appealing to ignorance* (*argumentum ad ignorantiam*).

Concluding Remarks

It is this author's intent to use extra-biblical evidence and information to aid in understanding Genesis 6-9. This author will appeal to such things as the coal deposits, sedimentary rocks, or limestone deposits to demonstrate that the flood occurred just as Moses recorded it. This author will, from time to time, refer to laws of nature as well as observable facts to

[30] In 1834, French archaeologist Félix Marie Charles Texier discovered monumental ruins in Boğazköy (central-northern Turkey). It wasn't until 1886 that his compatriot Georges Perrot, an archaeologist who also excavated the site, first identified it as Hattuša, the Hittite capital.

aid in interpretation of the Scriptures. Paul stated that the Gentiles had extra-biblical witnesses of the existence of God (Rom. 1:18-21). God left the physical evidence for all mankind (Ps. 19:1).

THE EXTENT OF THE FLOOD

CHAPTER FOUR

Introduction

The extent of the flood is of utmost importance. There are two basic ideas on the extent of the flood by those who believe in the biblical flood: (1) the universal flood theory and (2) the local flood theory. In order to evaluate the information, both biblical and extra-biblical, it will be necessary to apply the principles developed in Chapter 3 (logic, hermeneutics, science, etc.) and in Fox, 2024. This author affirms that the destruction was universal and rejects the local flood theory.

Reasons to Reject the Local Flood View

First, God spoke of destroying all flesh (Gen. 6:13, 17, and 7:4), and such statements could not be fulfilled by a local flood. Hence, the local flood theory cannot be reconciled with the plain statements of the Scriptures.

Second, the immense size of the ark (probably 450 feet × 75 feet × 45 feet [137 meters × 23 meters × 14 meters], assuming that a cubit (The "length of the fore-arm." [Brown, *et al.*, p. 52]) is 18 inches long [46 centimeters]), as set forth in Gen. 6:15 is further evidence against the local flood theory. Why build such an immense vessel for a local flood? Why bring the animals into the ark for a local flood? The animals could simply have migrated to a different area without going into an ark (certainly the birds could have migrated).

Third, the height of the waters (Gen. 7:20) is of such a nature to make the Bible look absurd if it is speaking of a local flood. Since the flood lasted over one year (Gen. 7:11 and 8:14), the water could not remain above the mountains and be only a local flood. Note also that the ark came to rest on or near a mountain five months after the flood began (Gen. 7:11, 8:4, and 5). No mere local flood could cover the mountains for five months. Orogenesis (mountain building) will be discussed in a

later chapter. It is the contention of this author that the mountains were raised during the flood, but that the process was essentially complete in Gen. 8:5. The Psalmist speaks of the flood covering the mountains (Ps. 104:6).

Fourth, the assumption that the language of Genesis 6-9 is an allegory denies the plain statements of many other passages of Scripture. The following are some passages which speak of the flood and give no hint that it was not an historical fact: Ps. 104:6, Amos 5:8, Mt. 24:37-39, Lk. 17:26-30, Heb. 11:7, 1 Pet. 3:20, and 2 Pet. 2:5. It is generally accepted by Christians that the language of Scripture is to be interpreted as literal language (particularly in prose and law), unless there is a compelling reason to interpret it figuratively. Since there is no compelling reason to interpret the language of Genesis 6-9 as figurative language, it must be literal language. Those who claim the flood was only a local flood should answer the following question: "How would God have depicted the flood in the Scriptures if He wanted to convey the idea that the flood were universal?"

Fifth, the universal nature of the rainbow is evidence against a local flood and for the universal nature of the destruction (Gen. 9:12). Why do we have a universal token of a promise not to send a flood to a small locality? Again, the local flood doctrine would make the Bible seem absurd.

Sixth, it is evident that the Scriptures teach that all mankind descended from Shem, Ham, and Japheth (Gen. 9:18-19 and 1 Pet. 3:20). This demonstrates that all humans except those in the ark were killed in the flood. This is evidence that the flood was not merely local in nature unless one can prove that mankind was localized to a small area of the Earth. How can mankind have "dominion over … all the earth, and over every creeping thing that creepeth upon the earth" (Gen. 1:26) and his habitation be confined to a small area (where the local flood was confined)?

Seventh, the claim that the flood was local implies that God is a liar. Since God promised not to send a flood of the same

nature as that of Genesis 6-9 and large local floods have occurred since Genesis 9, it follows that the flood of Genesis 6-9 was not a large local flood. If God promised not to send a large local flood and He has sent such floods, He would be a liar. Since God cannot lie (Tit. 1:2 and Heb. 6:18), the flood was not merely a large local flood.

Additional Reasons to Believe in the Universal Flood

The abundance of marine fossils and sedimentary rock in the interior of the continents gives credibility to the universal flood idea. The local flood advocate cannot explain their existence from his theory. Furthermore, Peter reveals that the wicked antediluvian world perished (1 Pet. 3:20 and 2 Pet. 3:5-6). But a local flood leaves some trace of the area and it was in God's plan to utterly wipe out such a wicked group of people (Gen. 6:5-7). The Hebrew word translated **destroy** in Gen. 6:5-7 (מחה) – pronounced *machah* means "to stroke, to rub over … to wipe, off or away, to wipe." (Gesenius, p. 463)

Many of the ancient cultures of every continent have traditions[31] which relate how a supreme being was angry with mankind and sent a flood to destroy man. Most of these traditions relate how man escaped the devastation by building a boat of some kind. The widespread nature of these traditions is proof of a universal nature of the destruction mentioned in Genesis 6-9. Several writers discuss this extensively: B. Nelson (pp. 165-190), Patten (pp. 164-193), Rehwinkel (pp. 127-164), Thompson (1986b, pp. 11-13), Martin, Montgomery (pp. 34-45 and 61-64), Liguori, and Whitcomb and Morris (pp. 37-42 and 48-54). If the reader wishes to pursue this study further, these eight books have extensive references to the traditions. There is usually a kernel of the biblical account of the flood in each story. Cloud explains these traditions by saying:

> Were all the water now locked in glacial ice returned to the oceans, sea level would rise, drowning coastal cities. Although a disaster of that magnitude would presumably

[31] AAOEC call these legends or myths.

> come on gradually and therefore give some warning, surges of warming polar ice into the oceans could speed the process. Evidence for such a surge and rapid rise of coastal sea level about 11,600 years ago, for instance, has been called upon to explain the widespread tradition of an ancient great flood, as in the biblical book of Genesis. (p. 484)

This explanation of the flood traditions does not explain several kernels of truth that are found in most of these traditions. *First*, there is usually the building of a boat after a warning from God (the Great Spirit, etc.). *Second*, there is usually the preservation of animals along with man. *Third*, the flood is usually punishment for sin. *Fourth*, there is frequently a mountain associated with the end of the flood. None of these kernels of truth can be linked with a gradual rise in the levels of the oceans that flooded coastal cities.

Kang and Nelson claim the Chinese pictograms (which are also used by the Japanese) depict the events of Genesis 1-11 (including the great flood).

> The Chinese character for *boat* … gives this very representation. There are three elements pictured: a vessel …, eight …, and mouth …, meaning 'people.' The word for boat, then, tells the story of this first great ark which, in spite of the years of warning and pleading by Noah to his compatriots, had just eight passengers. (Kang and Nelson, p. 95)

Kang and Nelson discuss other aspects of the postdiluvian world (pp. 93-102). Everyone who wishes to study the first eleven chapters of Genesis needs a copy of this work by Kang and Nelson. Nelson and Broadberry also discuss the Chinese pictograms and how they relate to biblical truths. Nelson and Broadberry add more materials to those of Kang and Nelson.

Concluding Remarks

The local flood advocate has no mechanism with which to explain the presence of marine fossils on the interior of the continents, except AAOEC uniformitarianism (cf. p. 18-ff.). Therefore, he cannot refute the theory of uniformitarianism

and has accepted a necessary part of the system of atheism (long periods of time). He has unnecessarily given ground to the atheists/agnostics, ground that they must hold in order to make their onslaughts against the truth. The local flood theory is not only false, but dangerous in that one gives the atheists/agnostics a very important point if he espouses this theory. As with any doctrinal error this may have far reaching effects many of which cause people not to believe (it may destroy faith in the Word of God and in God thereby).

SOME EFFECTS OF A GLOBAL FLOOD

CHAPTER FIVE

Introduction

In Chapter 4 (cf. p. 38) it was established that the flood was global in nature. God intended that the destruction would destroy every living thing (Gen. 6:7, 13, 17, 7:4, 21-23, and 8:21). The flood of Genesis 6-9 would have several effects upon the Earth and upon the living things upon the Earth (both during and after the flood). These effects give the reader good reasons to study this matter and aid in building faith in those who learn the truth on the biblical flood. AAOEC have claimed that the Christian cannot explain many things that are observed in nature and that the Bible contains contradictions to what one sees in nature. This Chapter will aid in providing information which will build faith in God and His Word.

General Effects of the Flood

First, one of the most obvious effects would be the destruction of all land plants, animals and mankind (Gen. 7:21-23). Peter stated that the antediluvian world (order[32], not the Earth, but the system) perished (2 Pet. 3:5-6). The destruction of the plant life would leave the surface of the Earth essentially barren with plants needing to grow to cover the surface of the ground. The dove brought back an olive leaf (Gen. 8:11) which was evidence that plant life had begun to grow. Noah interpreted this to mean that the flood waters had abated. The absence of vegetative cover would greatly increase the soil erosion from rainfall in the postdulivian period. Ordway states:

> One reason for the more extensive damage caused by recent floods (other than greater construction of property along the flood-plain) is the destruction by man of the cover of vegetation which formerly protected slopes throughout

[32] κόσμος "**1.** in Grk. writ. fr. Hom. down, *an apt and harmonious arrangement* or *constitution, order*. **2.** … *ornament, decoration, adornment*: … **3.** *the world*, i.e. *the universe*" (Thayer, p. 356)

> the drainage areas of rivers. When water falls on slopes which are covered by thick grass and numerous trees, much of it sinks into the ground, and very little runs off immediately – almost none from a forested area. (pp. 102-103)

This rapid erosion would greatly increase the sedimentation. The uniformitarian geologist uses the present rate of sedimentation in a postdictive manner (they extrapolate it backwards in time with linear extrapolation). This absence of vegetative cover is another factor that would make linear extrapolation of the rate of sedimentation to be an invalid method of dating the Earth (the flood itself being the major factor).

Delays in repopulation of the land masses by plants would bring about extensive wind erosion as well. There is evidence that wind erosion occurred in a number of places on the Earth. Wind erosion would add dust to the atmosphere which would affect the climate.

Second, the Earth would have to be repopulated after the flood; hence the ark would be used to preserve the animals (Gen. 7:23). The animals were used to repopulate the Earth (Gen. 8:17). If the Bering Strait were once a land bridge, as some scientists think (cf. Amato, p. 22 and Hoffecker *et al.*, pp. 46-53), some of the animals could have traversed this bridge to live in the western hemisphere. Scientists call this land bridge "Beringia." The Japanese current (a warm ocean current) would have kept the shoreline warm and allowed for passage of animals of all kinds from Asia into North America. Certainly, the Earth could have been repopulated by means other than land bridges, but land bridges serve as a reasonable explanation of the repopulation of the Earth. Birds simply flew to various parts of the Earth, other animals swam (e.g. polar bears swim for great distances), and other means might have spread the animals over the face of the Earth.

There are numerous examples of repopulations of parts of the Earth that had been sterilized (all life-forms were killed) and of emerging islands.

> On three small islands between Java and Sumatra, … in the summer of 1883 … one of the Krakatau[33] Islands blew up … on the islands of Panjang and Sertung, and on the remnant of Krakatau itself (now called Rakata), the effects were devastating. All three islands were completely sterilized.[34] (Waters, p. 64)

Waters discusses the repopulation of these islands by both plants and animals during the last century since the volcanic eruption (showing a number of pictures of these islands). The island of Surtsey[35] was formed by spewing lava in November 1963 (Matthews, p. 5; Throarinsson, pp. 713-726; and Hanson, p. 18) and has been populated by a number of both plants and animals. Indeed, nature is quite resilient as these islands and other similar instances (Mount Saint Helens[36] etc.) demonstrate. The Earth was easily recolonized by plants and animals after the flood.

Third, the erosion of canyons would be extensive because the erosion increases exponentially with the speed of the flow. Ordway states:

> Streams perform most of their work of erosion, transportation, and deposition during floods. In fact, in the few days of a powerful flood, a river may accomplish more in these respects than it does during the rest of the year or perhaps even for several years. Some large rivers have been known to deepen their channels more than 100 feet (*30.5 meters – MRF*) when waters are exceptionally high. Such large rivers flow upon unconsolidated sediments that bury the bedrock floors of their valleys, and they can erode the bedrock only during floods. (p. 101)

The flood of Genesis 6-9 was so massive that the amount of erosion would be extremely large, by uniformitarian standards.

Fourth, the deposition of sediment would be enormous and would contain a large number of fossils of all kinds. The

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[33] Also spelled Krakatoa.
[34] All living organisms were killed.
[35] Near Iceland.
[36] In the state of Washington.

uniformitarian author, Stokes, claims that "most fossils are formed beneath shallow water, where sediments are being deposited rapidly and continually over long periods of time." (p. 86) If the flood was primarily tidal in nature (the deep or oceans flowing and covering the land), sea creatures would be present in the sediment. Since benthic organisms generally have a greater density than fish, the tendency of moving water to sort objects by weight and size would deposit these animals in the lower sediment along with such plants as were covered by the sediment. This is precisely what David G. Smith claims the fossil record proves (cf. this author's quote of Smith on pp. 47-48). Brouwers claims that some of the fossils were sorted by size (cf. this author's quote of Brouwers on p. 87). The fossils were sorted by density because a tidal flood would act like a giant centrifuge.[37] Some benthic organisms were not deposited in the lower sediments because they were some distance from the coastline and were not pulled across the land masses by the earlier tides but were carried by the later tides. The creatures which can swim would be deposited in strata that was deposited later because of their lower density and ability to move more freely. Other strata contain amphibians and reptiles because of the locations where they lived (possibly near the coastlines). Reptiles and amphibians would tend to be sorted by the moving water because of their lower density also. Mammals and birds might flee to the higher ground and also, because of their lower density, be deposited in the upper strata of the sedimentary rocks. There would, of course, be numerous instances of all kinds of creatures being deposited together as can be observed in many places. There is really no need to accommodate the *geologic column* of the AAOEC because this column is nothing but the figment of the vivid imagination of the uniformitarian geologist. Raup correctly states:

An interesting irony in this whole business is that the

[37] A machine using centrifugal force for separating substances of different densities. Centrifuges spin a mixture of various materials, and the lighter materials tend to spin to the top and are separated from the denser materials. This principle is used to separate the cream in whole milk from the milk. Another excellent illustration of the centrifuge is the act of panning for gold.

> creationists accept as fact the mistaken notion that the geologic record shows progression from simple to complex organisms. Faced with the problem of reconciling this presumed sequence with rapid deposition by the Flood, the creationists develop painful explanations of the sequence: large mammals floated to the surface of the Flood waters, complex (and therefore more mobile and intelligent) animals were able to escape to higher ground, and so on. So, the creationists have fit essentially false information into their model – something that would have been quite unnecessary had they read the geological literature more carefully. (p. 23)

The uniformitarian textbook writer neglects to point out that the deposition and preservation of a fossil is a rare occurrence. "Fossilization, even under the most favorable conditions, is a rare accident." (Hapgood, 1970, p. 69) David G. Smith states:

> The term "fossil" designates any trace of past life …
>
> Body fossils of animals and plants nearly always consist only of the skeletonized or toughened parts because the soft tissues are destroyed by microbial decay or scavengers. Even the hard parts may become so bored by organisms such as sponges, fungi and algae that they are open to destruction … Many fossil plants and some animals are known only as fragments, and it may be difficult to determine which elements belong together. This often leads to a multiplicity of names for different parts of what may turn out to be the same species …
>
> The remains of an organism that survive the agents of biological, physical and chemical attack must next become buried by sediment. It is hardly surprising that organisms living in the sediment (the infauna) have a greatly increased chance of preservation than those living on the sea floor (the epifauna) or swimming or floating above it (pelagic organisms) …
>
> "Catastrophic" burial by a rapid influx of sediment is necessary to preserve delicate epifaunal organisms. Field observations have shown that modern crinoids (sea lilies

> and feather stars), for example, disarticulate within a few days of death; rapid burial prevents this and is thus invoked to explain a number of fossil "starfish beds" where delicate starfish and brittle stars are preserved. With continued sedimentation the overburden increases, water is driven out of the sediment surrounding a fossil and compaction takes place. The degree of compaction varies but is greatest in shales in which delicate shells may be severely crushed. Experiments with spheres of different composition embedded in different matrices, to simulate the flattening of fossil plant spores, have shown that a variety of artefacts that might be mistaken for original features can be produced by compaction. (pp. 363 and 365)

Smith is admitting that the compaction of the fossil might cause the paleontologist to mistake the original features of the organism. How can they know what an organism looked like if all or at least most of its soft parts were destroyed? Some of the pictures in the geology books are nothing, but the fertile imagination of the paleontologist!

The very nature of the destruction of Genesis 6-9 provides an excellent mechanism to deposit and preserve fossils. Uniformitarianism either Lyellian (cf. p. 18) or *punctuated uniformitarianism* does not provide a suitable mechanism to deposit and preserve fossils. Fossils must be deposited and covered rapidly because of scavengers and decay. For example, the large numbers of American bison slaughtered on the great plains of North America have left no trace for modern man even though they were slaughtered within the last 150 years.

Berner and Canfield wrote:

> In the present ocean most burial of organic matter occurs in rapidly deposited near-shore sediments of deltas, shelves, estuaries,[38] et cetera … Burial occurs under normal marine conditions which means in oxygenated bottom waters where bioturbating benthic organisms live … The direct proportionality between marine organic carbon burial and total sedimentation rate should not have

[38] Estuaries are water passages where the tide meets a river current, especially an arm of a sea at the lower end of a river.

> been affected by changes in atmospheric O_2 levels in the geological past. (Berner and Canfield, p. 335)

There is no doubt that the present deposition of fossils is a slow process and is extremely rare. In fact, the amount of sediment in the oceans is quite small. There should be deep layers of sediment in the oceans, if either uniformitarianism (cf. p. 18) or infrequent catastrophism (*punctuated uniformitarianism*) were true.

Note what Hapgood wrote:

> However, the greatest surprise of recent oceanographic exploration has been the discovery that this supposed thick layer of sediment is nonexistent. The layer of sediment on the ocean bottom is uneven, in some places only a few feet or a few inches thick, and is rarely of great thickness. (Hapgood, 1970, p. 25)

Dott and Prothero state:

> The apparent youthfulness of the entire present deep-sea floors came as a great shock, for, as we argued in Chap. 6, basaltic oceanic crust is chemically more primitive than granitic continental crust. Now we discover that not only do continents apparently contain the only record older than 200 million years, but also that there is a lot less deep-sea sediments than what we expected after such long erosion of continents. The evidence forces us to think that both deep-sea sediments and oceanic crust have been removed over the eons of geologic time. (p. 142)

Judson states:

> Whether we use the rate of erosion prevailing before or after man's advent, our figures pose the problem of why our continents have survived. If we accept the rate of sediment production as 10^{10} metric tons per year (the pre-human intervention figure) then the continents are being lowered at the rate of 2.4 cm per 1000 years. At this rate the ocean basins, with a volume of 1.37×10^{18} m^3, would be filled in 340 million years. The geological record indicates that this has never happened in the past, and there is no reason to believe it will happen in the geologically foreseeable future.

> Furthermore, at the present rate of erosion, the continents, which now average 875 m in elevation, would be reduced to close to sea level in about 34 million years. (pp. 371-372)

Kennedy states:

> The fourth problem, that of the long lifetime of continents and mountain ranges, is perhaps the most difficult of all. The rivers of the world strip tremendous quantities of rock debris off the continents each year and deposit it in the oceans … The great rivers are steadily wearing down their basins … At this rate, all the land masses of the world would be eroded to sea level in something of the order of 10-25 million years. (pp. 497-498)

Kennedy and Judson (above) do not obtain the same times for the erosion of the continents, but their times are within one order of magnitude of each other.

The lack of extensive amounts of sediment demands that the AAOEC explain the absence of the sediment. This has caused some AAOEC to respond by claiming that the sediment has been elevated as continents. J. Wilson states:

> It is shown that the rate of erosion and deposition is such that it should have given rise to great shelves about the continents in past time. The shelves that survive are inadequate, so that it can be argued that orogenesis has generally occurred in and destroyed former marginal shelves and caused the growth of the continental blocks. (1952, p. 448)

The Effects on Postdiluvian Organisms

The fossilization of both plants and animals would greatly reduce the chemical building blocks for plants and animals available for life. For instance, the amount of carbon in the atmosphere and in the topsoil would be greatly reduced, thus posing a detrimental effect on plant life.

When God created the Earth, it probably had a fairly even distribution of minerals and elements on all of the surface. The plants would have been created so as to make optimum usage of minerals and elements. The animals likewise would have

been extremely healthy because they would have eaten plants which had the proper amounts of minerals in the plant. The flesh-eating animals would have eaten animals (meat) with the proper amounts of the elements also. The modern science of nutrition has proven that plants, animals, and man need a certain optimum distribution of elements and minerals. Anything less than this optimum can cause diseases, stunted growth, and shorter life expectancy among many other factors (cf. Chapter 17). The fact that the soil is deficient in certain elements can contribute to reduced growth of plants, animals, and man thereby. For instance, the soil in Australia has a deficiency of copper and the soil of Chile has a surplus of copper. Perhaps the tendency of moving water to sort the material could account for these surpluses and deficiencies. Alfalfa is a good source of nutrients for animals because the alfalfa plant sends down its roots to depths of over 20 feet (6.1 meters), and the alfalfa plant has a number of rare minerals in the plant that other plants which have shallow roots do not have. These rare minerals have been depleted from the topsoil by erosion of the plant materials to the oceans and/or by the flood. Another factor is the continual leaching of these trace water-soluble elements by water from rainfall. The removal of these elements by leaching depletes the soil of these elements and lowers the fertility of the soil. If there was no rainfall in the antediluvian environment, but the Earth was watered by a heavy dew, this leaching would have been almost non-existent before the flood.

This is an untapped argument against the theory of organic macroevolution. Since both plants and animals should have evolved in such a manner that the optimum conditions would be those of the present time (time when they were evolving), they should optimize the conditions wherein they evolved. If the theories of uniformitarianism (cf. p. 18) or infrequent catastrophism are correct, the plants should have adapted to the change in the soil and should not need fertilizer. If there is an *ideal soil* for plant growth, this must have been the soil that existed prior to the flood. The AAOEC cannot explain why plants adapted to this *ideal soil* rather than to the soil in which they evolved. How can the AAOEC say the soil was

constantly changing its constituent parts and the plants evolved (by adaptation) to a soil of a different constituency? If macroevolution is truly random in nature, there should have been some organisms that were adapted to the environment as it existed during the evolution rather than to some other environment. This author does agree that microevolution occurs within the limits of the genes in the plants and animals. The reader should remember that the word *evolution* means change. There are changes within certain limits for all species of organisms. These changes are within the genetic variations of each species[39] that God designed within them at creation. But macroevolution, evolution whereby one plant or animal *kind* changes into another *kind*, does not occur (Appendix D). Macroevolution is sometimes called *transmutation*. Microevolution occurs as the wide range of genetic variations in each species adapts to the environment. Extensive microevolution has occurred in very short periods of time (cf. Johnston and Selander). This adaptation occurs because of such things as camouflage (which causes those that are camouflaged to survive and the others to be killed by predators). More of the camouflaged organisms survive to reproduce and fewer of the non-camouflaged organisms survive to reproduce. Cloud discusses the processes of organic macroevolution under the heading "On Selective Pressure":

> So, what channels natural selection? It is channeled, like the course of skiers on a hillslope, by environmental pressures, subtle or lethal … They become extinct when they fail to adapt to changing conditions … Oxygen was an early forcing factor. Considering the primordial anoxic[40] Earth, after its waters became otherwise receptive, the biologist reconstructs a likely scenario in which the first minute anaerobic beings were something like bacteria. When one of them came to produce and then tolerate O_2 – and after the many early O_2 sinks were sufficiently neutralized by the combined forces of photolytic[41] and

[39] The scientific term *species* should not be confused with the biblical term *kind*. Scientists cannot agree on the definition of the word *species*.

[40] No oxygen.

[41] A photolytic process is a chemical decomposition by the action of radiant energy.

> photosynthetic O_2—the nucleate cell arose, sexuality began, and eucaryotes[42] flowered. As O_2 rose to levels high enough to meet metazoan requirements, cellularly diversified, many-celled animals appeared, probably from different protozan ancestors, introducing the Phanerozoic Eon. (p. 397)

Mathematically it would require millions of years for these small changes to change one species into another (time is a necessary condition for macroevolution, but not a sufficient condition [cf. p. 15]). This is why the atheist needs the Earth to be billions of years old. What one sees with microevolution is adaptation to the environment (within certain limits), but there is no adaptation to the environment on a large scale (macroevolution). If macroevolution is the result of millions of changes (microevolution) and microevolution has extensive adaptation to the environment, it follows that macroevolution should have extensive adaptation to the environment. The atheist – Raup – correctly states: "But we are not sure whether we can extrapolate this process of *microevolution* to explain the larger scale events of *macroevolution*." (March 1983, p. 25)

The Effects on the Earth

Since water has a weight of about 60 pounds per cubic foot (9,810 Newtons/m^3 or 1,000 kg/m^3), one would experience pressures of over 1,200,000 pounds per square foot (59,800,000 Newtons/m^2) at depths of 20,000 feet (6,096 meters). Since the flood waters covered the mountains in the region of Ararat (Gen. 7:19-20) and Mount Ararat is almost 17,000 feet (5,181 meters) high, one would expect the flood waters to be at least that deep (Gen. 8:3-4). In fact, the waters were deeper than 17,000 feet (5,182 meters) because Moses said: "And the waters prevailed exceedingly upon the Earth; and all the high mountains that were under the whole heaven were covered" (Gen. 7:19). With the presence of extensive amounts of sediment, the water would probably double in weight and would increase to about 150 pounds per cubic foot (24,500 Newtons/m^3) when it solidified into rock. This weight

[42]Eucaryotes are organisms composed of one or more cells containing visibly evident nuclei and organelles.

of several million pounds per square foot would form coal from the plants in the sediment below the water. These pressures could bring about the formation of petroleum and natural gas in a matter of days instead of years. Pennisi discusses chemical reactions which produce both coal and petroleum in very short periods of time (pp. 121-125). Larsen states:

> Several million years and a minor imperfection in the carbon cycle have given us coal, yet Winans and his colleagues at Argonne National Laboratory have taken less than one year to prepare a thoroughly characterized synthetic coal. The material they produce is indistinguishable from the real thing by all the techniques so far applied to it. (p. 316)

It is possible that the antediluvian conditions caused the wood from which the coal was formed to have a greater density than the postdiluvian wood. This could be one explanation of how plant materials sank to the bottom of the water. Some woods have densities greater than water (H_2O) and will sink in water (cf. Archimedes' Principle on p. 175). The bark of the Bois d'Arc tree[43] will sink in water and the wood will just barely float in water. The wood of the ironwood tree, also known as the American hornbeam[44] or musclewood, has a greater density than water.[45] The trees being transported by the flood waters would not be "dry wood," but would be "green wood" which is denser than "dry wood." Wood tends to increase in density when it is saturated with water. If the flood were tidal in nature and the plant material were deposited on soft sediment as the "tide went out," it would tend to sink in the sediment and be easily covered when the "tide came in" in the next tidal cycle.

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[43] Also called Osage orange (scientific name *Maclura pomifera*).

[44] Scientific name *carpinus caroliniana*.

[45] Ironwood's extreme hardness and durability also made it an attractive choice for shipbuilding during America's Revolutionary War. According to some accounts, British cannonballs were said to bounce off the sides of American ships that were built from ironwood, due to the wood's extreme hardness and density. This made ironwood an ideal choice for shipbuilders, as it offered a level of protection from enemy fire that other woods did not. One of these ships was deemed unsinkable and was called *Old Ironsides* by the British.

The formation of petroleum does not require millions of years. Hydrothermal oil was formed in a relatively short period of time.

> Radioactive-carbon isotope (^{14}C) dating of the oil from this and nearby areas (dives 1630 and 1626) gives ages of 4.2-4.9 × 10^3 yr … Therefore, in Guaymas Basin, the overall time-temperature conversion of sedimentary organic matter to hydrothermal petroleum takes place over a short geological timescale (<5,000 yr) and commences under relatively mild temperature conditions. (Didyk and Simoneit, p. 67)

The petroleum formed in the Guaymas Basin is probably biogenic petroleum.

> The gas chromatography/mass spectrometry[46] data … are compatible with a predominantly bacterial/algal origin for the source organic matter and suggest an adequate degree of maturation. (Didyk and Simoneit, p. 67)

In addition, hydrocarbons were discovered in recent sediments in the Gulf of Mexico (Paul Smith, pp. 437-439). The core taken by Paul Smith off Grand Isle, Louisiana contained 106 feet (*32.3 meters – MRF*) of sediment. "Ages of 11,800-14,600 ± 1400 years were obtained from the hydrocarbons extracted from several sections of the Grande Isle core of recent sediments." (p. 439) Either hydrocarbons are formed in a matter of a few thousand years, the radiocarbon dating is incorrect, or both are true. This establishes that 106 feet of sediment was laid in less than 14,600 years (assuming that radiocarbon dating methods are valid). Radiocarbon dating will be considered in detail in Chapter 13 (cf. pp. 267 through 283).

Modern technology has been able to produce petroleum from waste in a period of a few days by the application of heat and pressure. Research in this area has shown that:

> scientists at the U.S. Bureau of Mines laboratory in Bruceton, Pa., have been exploring the production of fuels

[46] Spectrometry is the relative measurement of radiant energy as a function of wavelength or frequency of light. Each element radiates a different spectrum (different colors) of light when heated.

> from agricultural wastes … In the pyrolysis[47] method, developed by the bureau's Martin Schlesinger and David Wolfson, bovine manure or other largely cellulosic waste material is heated for about six hours at about 900°C. At this temperature, the material is converted to gas, oil, and solids, all of which can be used as fuel. (Anonymous #1, C & E News, p. 14)

When anything is subjected to increased pressure, the temperature increases. This supplies the mechanism for the formation of petroleum. Natural gas deposits were probably created by the pressure and resultant heat caused by the pressure.

Research by Saxby *et al.* produced petroleum in about six years in conditions designed

> to simulate conditions in a subsiding sedimentary basin with constant geothermal gradient … At less than 300° C torbanite[48] generated a parafinnic crude oil in 35% yield, while the brown coal gave a wet, CO_2 -rich natural gas. In most respects, these experiments, which are possibly as slow as can be realistically planned within a human time-scale, appear to have duplicated geochemical hydrocarbon generation. (1986, p. 69)

This research is also discussed by Saxby and Riley (1984, pp. 177-179). It was also reported in *Science News*, Vol. 125, p. 187 (Anonymous #2). This research proves that it is not necessary to have millions of years to produce petroleum.

Alternative Theories of the Formation of Petroleum

The reader should be aware that Thomas Gold has theorized that methane[49] gas is in the mantle of the Earth and is converted into hydrocarbons (pp. 3-19). Gold

> … argues that the earth holds huge reserves of commercial-grade gas that developed not from fossils but from methane trapped deep within the earth's mantle since the planet

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[47] Pyrolysis is decomposition by heat.

[48] Torbanite is a substance intermediate between oil shale and coal, having a high carbon content and considered to be a type of boghead coal.

[49] CH_4

formed. It therefore predates life on earth. (Mary Nelson, p. 1C)

Osborne has a non-technical discussion of Gold's theory – *deep gas hypothesis* (pp. 39-54). If Gold is right, there could have been petroleum products available for Noah to pitch the ark, before the flood. However, pitch could be distilled from plants without petroleum. Gold's theory was tested, with some positive evidence, in 1988 (Begley, p. 53 and Liversidge, pp. 43-48). Robert Hefner, an Oklahoman, a disciple of Thomas Gold, has discovered extensive amounts of natural gas at depths that the older geologic theories said should not contain natural gas.

> As far back as 1978 Hefner predicted a resource base of 1,200 to 1,500 trillion cubic feet, despite ridicule by everyone from oil executives to members of Congress … Few oil wells have been drilled to depths greater than 15,000 feet because temperatures there exceed 175° C, the threshold above which oil is converted into natural gas or graphite. However, several companies, including Hefner's, have found large stores of natural gas below 20,000 feet. (Fischetti, p. 17)

Kerr (1990) claims that the theories of Thomas Gold have been discredited (pp. 1177-1179). Kerr says:

> Sure, they say, the Siljan granite contained about 100 parts per million of methane (the principal component of natural gas), but that is less than the amounts found in dry holes at conventional exploration sites. And the isotopic composition of the accompanying helium demonstrates, by conventional reasoning at least, that none of the gas is seeping up from the mantle. (1990, p. 1179)

Since large amounts of methane were found in oceanic crust (Kelley, pp. 2943-2962), drilling on the Siljan ring in Sweden was possibly an inconclusive test of Gold's theory.

Evans gives a summary of some of the latest research being conducted on Gold's theories (pp. 114-115). The unfortunate thing about the Geological establishment is that they will neither listen to Thomas Gold nor allow him to publish his theories in their journals. This results in his theories not being discussed thoroughly. If his theories are unsound, they should

be thoroughly discussed in scientific journals and refuted.

Thomas Gold is an astrophysicist, and his theories might be influenced by his background more than by empirical evidence (cf. p. 32). Future research on his theories will possibly either reveal weaknesses in his theories or strengthen them.

The Curse of God

Could not the events of Genesis 6-9 supply a part of the fulfillment of the threefold curse of Gen. 3:17-19? Note the nature of the curse: (1) God cursed the ground, (2) in toil man was to eat of the ground, and (3) thorns and thistles were to be brought forth.

When did the curse of Gen. 3:17 occur? It is commonly accepted that it came about instantly. It is the conviction of this writer that such may not be the case. Two examples will help to prove that the Lord does not always bring about the fulfillment of a curse instantly. *First*, the curse of Canaan in Gen. 9:25 did not come about for several hundred years when Israel conquered the land of Canaan. *Second*, the Amalekites were cursed in Ex. 17:14, but it was not fulfilled until 1 Sam. 15:3. Therefore, there exists no reason why the curse of Gen. 3:17 had to be instantaneous. In addition to this it is evident that the flood was related to some kind of curse of the ground (Gen. 8:21). The curse of Gen. 3:17-19 and 5:29 may have been only partially fulfilled in Genesis 3. It is possible that the thorns and thistles were created by God in Genesis 3 and the ground lost its fertility in Genesis 6-9. Another possibility is that the curse of Gen. 8:21 may be a second curse of the ground (cf. Gen. 5:29). Still another possibility is that the thorns and thistles were created in Genesis 1 but were created to optimize the postdiluvian soil conditions rather than the antediluvian soil conditions. This last explanation is the most reasonable explanation because God rested (ceased to create) on the seventh day (Gen. 2:1-3). Several plants (sunflowers, black walnuts, certain thorny plants, etc.) put an allelopathic chemical on their seeds, stems, roots, leaves, etc. that retards the growth of other plants. Some commonly grown vegetables

(in the United States) that are allelopathic[50] are: asparagus, beans, beets, broccoli, cabbage, cucumbers, peas, soybeans, and tomatoes. This is why some vegetables should not be planted together. Some gardeners have learned this by empirical means – an informal application of the scientific method – trial-and-error (cf. Chapter 18). This might be part of the curse – thorns and thistles being allelopathic.

If either the curse of Gen. 3:17 was brought (at least partially) upon mankind by the flood of Genesis 6-9 and the events recorded therein or the flood brought about a second curse (Gen. 5:29 and 8:21), this could account for several things. *First*, it could help account for the longevity of the antediluvian people and the much shorter longevity of postdiluvian people. Since antediluvian people would have eaten food with the proper amounts of elements and minerals, it would have been healthful to them. *Second*, this would also help to account for the large size of the antediluvian reptiles. They would have grown large because a reptile continues to grow all its lifetime. Anything which prolongs the life of a reptile will increase its size.

Concluding Remarks

Many things which are observed in nature can be easily explained by the flood. These include such things as the large number of fossils, changes in the longevity of mankind, disappearance of the dinosaurs, etc. The believer in God does not have anything to fear from true science because the Scriptures are totally in accord with truth. The great flood had far-reaching effects on both the Earth and all living things upon the Earth.

[50] Derived from the Greek words ἄλλος and πάθης – cf. πάθημα.

THE WATERS ABOVE THE FIRMAMENT

CHAPTER SIX

Introduction

What was the nature of the antediluvian atmosphere? Is there biblical evidence, either implicit or explicit, that it was of a different nature than its present state? If the nature of the atmosphere were different, what effects would this have on life-forms? Specifically, how would it affect mankind? Is it possible for the present atmosphere to return to the state of the antediluvian atmosphere?

The waters above the firmament (Gen. 1:6-8) is a topic which needs to be studied by those who will study the subject of the flood. This should be studied by anyone who desires to understand the first eleven chapters of Genesis. The word **firmament** means "that which is beaten out or spread out" (Gesenius, p. 780), as the ASV gives in a footnote (expanse) – several translations render it as "expanse." God called the firmament **heaven** (Gen. 1:8). The sky was referred to as heaven in Gen. 7:23 as well as in a number of other passages. Hence, it is reasonable for the firmament to refer to the sky.

The Biblical Usage of the Word Heaven

The word **heaven** is applied to at least three other things in the Scriptures: (1) it refers to space (where the Sun, Moon, and stars are), (2) it refers to paradise, and (3) it refers to the abode of the Lord. Note the doctrine that there are at least three heavens taught by Paul (2 Cor. 12:2). The *first* heaven is where the birds fly, the *second* heaven is where the Sun, Moon, and stars exist, the *third* heaven is where the man of 2 Cor. 12:2 went (paradise) which is part of Hades (Lk. 23:43 and Acts 2:27-31). This (paradise) is not heaven (the abode of God) itself, but the waiting place where the dead go between death and the judgment (cf. Lk. 16:19-31 and Rev. 20:13). Paradise is part of Hades, and Hades will be cast into the lake of fire (hell – Rev. 20:14). Since the word *heaven* is also used to refer

to where God dwells (not paradise), there must be at least four heavens.

The Theories About the Waters Above the Firmament

There are four basic theories about the waters above the firmament. *First*, some think the waters above the firmament were oceans and the waters below were subterranean waters. This theory neglects the point that Moses defined the firmament as **heaven** (Gen. 1:8). Moses also stated that the birds fly in the firmament (Gen. 1:20). There might be a suitable mechanism to sustain large amounts of water under the soil (cf. Schmandt and Jacobsen).

The *second* theory is that the waters above the firmament were a water vapor canopy and the waters below the firmament were subterranean waters. It is claimed that these subterranean waters were the source of the "fountains of the great deep." (Gen. 7:11 and 8:2) One of the problems with this theory is that it has no mechanism to pull the waters back into the core of the Earth after the flood. Claims have been made that there were (still are) extensive amounts of waters under the crust of the Earth. Subterranean waters would be extremely hot. The present theory is that these subterranean waters have been pulled down by subduction. It would require massive amounts of subduction to pull these waters back into the Earth.

The *third* theory is that the waters above the firmament are above the sky (firmament) and that they exist in some state other than water vapor. (There are at least five states of matter: solid, liquid, vapor, plasma, and Bose-Einstein condensate.) Water exists in four states: solid, liquid, vapor, and plasma – it could also exist in the Bose-Einstein condensate state.[51] If the waters above the firmament are not water vapor, they must be either liquid water, a solid water (ice), or a plasma. For water to exist above the sky in any form

[51] If water were in the Bose-Einstein condensate state, it would have to be near absolute zero temperature and under exceedingly high pressure. So, this is not a viable option.

except as a vapor would require that it actually be in orbit above the Earth. Water has to be exceedingly hot to enter the plasma state. If water were in a plasma state, it would pose a number of problems for any flood model. For water to exist above the sky it would have to be above the atmosphere and it would exist in the form of ice such as the rings of Saturn. This theory leaves one with more questions than answers (this is Gielow's theory).

The *fourth* theory which will be considered is that the waters above the firmament existed in the form of water vapor and the waters below the firmament are the oceans. Water vapor is lighter[52] than air whereas water in either solid or liquid form is heavier than air. Therefore, water vapor would rise above most of the atmosphere. At this present time some water vapor exists in the stratosphere. This is the theory that this author contends is correct. When water vapor condenses into liquid water, it produces heat – this requires a mechanism to absorb this heat; otherwise, it would kill living organisms.

Can This Topic be Understood?

All of the Bible is understandable, and therefore, it is possible to ascertain the meaning of the expression *waters above the firmament*. If the waters above the firmament were in the form of water vapor, one could correlate the facts and laws of nature and arrive at a good interpretation of the Holy Writ. Water vapor is lighter than air (cf. Footnote 52), and therefore, could be suspended in the upper atmosphere. In fact, there are small amounts of water vapor[53] in the upper atmosphere at this present time. The present physical conditions could not allow enough water to be suspended to deluge the Earth with 20,000 feet (6,096 meters) of water (enough to cover the mountains Gen. 7:19).[54] But a sufficient quantity could be

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[52] Water vapor (H_2O) has an average molecular weight of about 53% the average molecular weight of oxygen (O_2) and about 58.7% the average molecular weight of air.

[53] The present atmosphere contains less than 1% water vapor.

[54] This much water vapor would increase the barometric pressure to levels which would preclude the existence of life on Earth. In addition, this would create a greenhouse effect that would elevate the temperature to levels

suspended to account for forty days of rainfall (Gen. 7:12). Water vapor is transparent to visible light; it is not the same thing as a cloud. A cloud is the result of the water vapor forming into droplets. If sufficient water vapor were suspended in the atmosphere to double the atmospheric pressure, it would provide about 407 inches of water for every square inch of surface of the Earth (1,034 centimeters for each square centimeter). This would provide an average of about 10.17 inches (25.83 centimeters) of rainfall each day for forty days. With enough water vapor to triple the atmospheric pressure, it would give an average of about 20.34 inches (51.66 centimeters) of rainfall each day for forty days.

With heavy rainfall, very little evaporation will occur. Water will not evaporate because the relative humidity is near 100% while it is raining. This leads to the conclusion that the rain was caused by water vapor already in the atmosphere. It is obvious that the total amount of water vapor in the atmosphere was greatly reduced by the 40 days of rainfall.

Noah had been warned of some things (plural) which he had not seen as yet (Heb. 11:7). The Bible records at least four phenomena which occurred prior to the flood of Genesis 6-9 which do not occur today. (1) It did not rain (Gen. 2:5). (2) Man had not seen a rainbow since it was a token of God's promise (covenant) not to send another flood (Gen. 9:13-15). (3) Man had not seen clouds since the rainbow is related to the clouds (Gen. 9:14). (4) The longevity of mankind was much greater before the flood than after the flood. Probably the animals lived longer also.

The Effects of a Water Vapor Canopy

Consider some of the effects of a water vapor canopy. It provides a mechanism for the forty days of rainfall (Gen. 7:4). It also explains the absence of rainfall, rainbows, and clouds. This follows because a water vapor canopy would allow visible light waves to pass through but would not allow the longer

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which would preclude the existence of life on the Earth.

wavelength heat waves (infrared) to leave the atmosphere. This is the same principle on which a greenhouse operates. Tomkin claims that the greenhouse effect is caused primarily by water vapor (pp. 13-14). Lubin says:

> Water vapor is the most important greenhouse gas, and the super greenhouse effect is caused by large increases in water vapor (as sea-surface temperature increases) and the subsequent trapping of infrared radiation. (p. 225)

Cess discusses the mathematical relationship between carbon dioxide (CO_2) and water vapor in the atmosphere and shows their interrelationship (pp. 736-737).

A water vapor canopy would keep the humidity very high and temperature almost constant. Such a condition would not create any high winds. Perhaps regions far removed from the oceans would experience desert-like conditions, but much of the Earth would not. Hollingworth claims:

> … it should be noted that current climatological views favour mild, rather uniform, temperatures when there were no polar ice-caps, and more strongly defined zonal climates during glacial periods. (p. 16)

Von Egeln and Caster state:

> The warm, equable climate, characteristic of the entire Cretaceous, prevailed almost over most of the world throughout the Jurassic with, possible, localized exceptions. This universal tropicality is difficult to explain. It may be in part attributed, as in the Cretaceous, to the crisscrossing of the continental areas by the warm waters of epeiric seas. However, this cannot explain the warmth in America, where epeiric seas were very small. (pp. 491-492)

Dott and Prothero agree with the assessment of Von Egeln and Caster (cf. pp. 413-ff.). They state: "By extrapolation from oxygen-isotope studies of Greenlandic and Russian fossils, it is estimated that Cretaceous north polar water was no colder than 10 to 15° C."[55] (p. 414) Dott and Prothero state:

> The presence of great organic reef complexes and rich, very diverse marine fossils in both Silurian and Devonian marine strata suggests warm, shallow, agitated seas …

[55] This is 50° F to 59° F (MRF).

> Devonian land plants are similar the world over, suggesting that climate was essentially uniform … The present certainly is not a very good key to the past[56] in terms of climate! (pp. 309-310)

The temperature of the antediluvian Earth was probably kept relatively constant by three mechanisms: (a) by air moving by gentle convection currents, (b) unobstructed movement of ocean currents, and (c) by infrared light, coming from near the equator, being refracted, back to the ground in the higher latitudes, as it entered the water vapor canopy. This process is the same principle by which radio waves "skip"[57] around the Earth. With the absence of high winds, the Earth would not experience any of the devastating storms such as tornadoes, cyclones (hurricanes or typhoons), floods, hailstorms, etc. Death and destruction are the result of sin, and these storms could be the result of sin also. It is reasonable to attribute these to the sinful conditions (Gen. 6:5-8) that brought about the flood (cf. Fox, 2024, Appendix L).

Large amounts of water vapor would tend to compress the heavier gases (argon, carbon dioxide, nitrogen, oxygen, etc.) near the surface of the Earth. There is evidence that the relative percent of oxygen in the atmosphere was different in the antediluvian atmosphere.

> Gary Landis, of the US Geological Survey, measured oxygen in microscopic air bubbles trapped in amber, a fossilized tree resin. He found that the amount of oxygen dropped from 35 percent 2 million years before the end of the Cretaceous period … Today, the oxygen level is at 21 percent … (Hecht, 1993, p. 11)

Others make this same claim for different reasons.

> The recently developed oxygen model of Berner and Canfield confirms general features of several earlier reconstructions and indicates a rise in oxygen to 35% and then a fall to 15% over the span of 120 Myr[58] during the late Palaeozoic. (Graham *et al.*, p. 117)

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[56] This is a subtle dig at Lyellian uniformitarianism.
[57] The word *skip* (implying a reflection) is a misnomer – it is refraction.
[58] Million years.

Berner (1989) has the oxygen level to be about 39% at about 290 million years ago (cf. graph on p. 604).[59] The theory postulated by Landis has been sharply attacked by some who claim an asteroid impacted the Yucatan peninsula (P. Tyson, p. 12). Monastersky, who advocates the asteroid impact theory (1992, pp. 72-75), lodged a sharp attack of the theory set forth by Landis (1993, p. 294). The replies, by Landis, to these attacks seem reasonable (cf. P. Tyson, p. 12). If Landis is correct about the percent of oxygen in the amber, the arguments made by this author are given greater credibility. If he is wrong concerning the permeability of the amber, there is no damage done to the other arguments made by this author.

Some of the effects of increased amounts of water vapor in the stratosphere are unknown by scientists.

> In global climate models, nearly half of the projected increase in temperature due to a doubling of carbon dioxide in the atmosphere results from the effects of increased water vapour. A doubling of water vapour in the stratosphere could lead to 1 °C increase in surface temperature. The present radiative forcing from the estimated rise in stratospheric water vapour resulting from methane oxidation is calculated to be about 10% of that of CO_2. But our limited knowledge of water vapour in the upper troposphere and lower stratosphere is one of the main uncertainties in climate modelling. (Oltmans and Hofmann, p. 146)

Scientists are fully aware of the fact that water vapor is opaque to light in the middle infrared region. This means that water vapor would not allow infrared (heat) to escape from the Earth back into space. It also means that energy from infrared light from the Sun would not reach the surface of the Earth. Since water vapor is opaque to UV-C light, energy from this light would not reach the surface of the Earth. Water vapor would probably prevent UV-B light from reaching the surface of the Earth. In addition, this means that any claim by

[59] Berner's graph is not included in this Volume.

AAOEC that there were extensive amounts of carbon dioxide in the atmosphere is untenable. This claim is untenable because it would cause a runaway greenhouse effect which would preclude the existence of life on Earth. The full effects and interactions are unknown (Maurellis, et al., pp. 1-5) Others agree with Maurellis.

> Some estimates project that if all the CO_2 locked in carbonate rocks were released, the surface atmospheric pressure would become 60 times higher, rivaling Venus' thick shroud.
>
> In 1986 James F. Kasting and Thomas P. Ackerman of NASA's Ames Research Center studied climatic models of an atmosphere with high levels of CO_2. They concluded that with 10 to 20 times more CO_2 than in our present atmosphere, surface temperatures may have soared to 85° Celsius (185° Fahrenheit) … the high temperatures could have been detrimental to burgeoning life. (Anonymous #3, Sky & Telescope, p. 351)

With an atmosphere containing large amounts of carbon dioxide the temperature of the Earth's surface would exceed the value which would allow the formation of organic molecules. The AAOEC must remove the CO_2 from the atmosphere to have life to evolve but cannot remove it without living organisms. The following destructive dilemma destroys his system:

> Either the temperature of the Earth's atmosphere was too high for life to evolve.
> Or the limestone, coal, etc. were not of organic origin.
> Or the organisms were created with the carbon cycle in balance and the limestone, coal, etc. were deposited during the flood.

Creation by God does not have this problem because the forests, grasslands, coral reefs, etc. were created *in situ*.

If such a water vapor canopy existed above the Earth prior to the flood, it could hold the temperature relatively constant at a temperature above 75° Fahrenheit (23.9° Celsius). Even AAOEC agree with this point (cf. the quote of Hollingworth on p. 64). It is evident that the temperature was about 75° to 80°

Fahrenheit (23.9° to 26.7° Celsius) because of the presence of tropical and subtropical plants under the Arctic ice caps (cf. Francis, pp. 56-62). On Axel Heiberg Island "the forests are mummified; the wood is dry and somewhat compressed, but otherwise unchanged … with many trees reaching more than a hundred feet in height." (Francis, p. 57) Axel Heiberg Island is only 680 miles (1100 kilometers) from the geographic north pole. At temperatures of about 85° Fahrenheit (29.4° Celsius) these plants thrive.

Noah was a righteous man, yet he became drunken (Gen. 9:21) which could be explained by the probable climactic conditions prior to the flood. It is also possible that yeast would not ferment in the antediluvian atmosphere. "When O_2 enters a cell that is degrading glucose anaerobically, the rate of glycolysis[60] decreases rapidly. This response is called the Pasteur effect." (Wolfe, p. 734) The Pasteur effect might be described as: "The inhibition of the fermentation activity by respiration." The Pasteur point (*the Pasteur effect or Pasteur reaction*) at which cells turn from respiration to fermentation might not be reached by yeast in the antediluvian atmosphere. If so, yeast would not ferment grape juice[61] and Noah would not have known about alcoholic beverages. It is of note that Jesus does not attribute drunkenness to antediluvian mankind (Mt. 24:37-39 and Lk. 17:27-28). He does attribute drinking to them, but it is in the context of an enumeration of day-to-day activities, not a cataloging of sins. It is evident that He does not have the drinking of intoxicating beverages in mind. Under these probable antediluvian conditions, one could not produce intoxicating beverages. This clearly explains why Noah – a righteous man (Ezek. 14:14, 20, Heb. 11:7, 2 Pet. 2:5, etc.) – became drunken. Noah had not experienced any fermentation prior to the flood and hence was ignorant of it.

The Pasteur effect could also explain why certain diseases occur that could kill large numbers of humans.

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[60] "The metabolic pathway in which glucose is degraded to liberate biological energy is called **glycolysis**." (Wolfe, p. 729)

[61] Pasteur discovered this effect while conducting research in wine-making.

Microorganisms which cause disease in the postdiluvian world probably functioned differently in the antediluvian world. In the antediluvian world these organisms probably did not cause disease, but in the postdiluvian world they produce disease. These diseases might not have occurred under antediluvian atmospheric conditions.

When the atmospheric conditions (the content of the atmosphere and the barometric pressure) change, the biological processes often change.

> Unicellular green algae involving normal photosynthesis[62] can be adapted in a few hours to photoreduction[63] in a hydrogen (and under special circumstances, a nitrogen) atmosphere involving direct reduction of CO_2 from atmospheric reductants[64]. (Berkner and Marshall, p. 244)

It is possible that some organisms that now kill or cause illness in mankind were beneficial to mankind in the antediluvian environment and the changes in the atmosphere changed from one process (e.g. photosynthesis) to another process (e.g. photoreduction).

Many life forms change the manner in which they function with changes in the atmospheric pressure and/or atmospheric content. For example, baker's yeast (*Saccharomyces cerevisiae*) has a completely different growth process under postdiluvian atmospheric conditions (present conditions) than it would have under reduced nitrogen conditions.[65]

> Usually, when yeasts replicate, the daughter cells buds off from the parent and eventually forms an independent cell. But in a reduced nitrogen medium, the daughter cell remains attached to the tip of the mother. Then a new cell buds from that daughter's tip, and so forth, until it forms a

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[62] Photosynthesis is the synthesis of chemical compounds with the aid of radiant energy and especially light; also, the formation of carbohydrates from carbon dioxide and a source of hydrogen (as water) in the chlorophyll-containing tissues of plants exposed to light.

[63] Photoreduction is chemical reduction under the influence of radiant energy (light).

[64] A reductant is a reducing agent.

[65] The FFM would have about 35% oxygen instead of the present 21% - reducing the percent of nitrogen in the atmosphere.

filamentous[66] chain of connected yeast cells. (Hoffman, p. 1510)

It is reasonable to assume that some supposedly extinct organisms exist today in forms that look different and/or function differently than the antediluvian forms.

The growth of marine life would be enhanced by the water vapor canopy.

> The majority of aquatic invertebrates lack well-developed respiratory and ventilatory[67] systems and depend upon diffusion-mediated respiration. Increased oxygen of Devonian and Carboniferous fresh waters would have increased their utility as nursery grounds for eggs and larvae, thereby expanding life-history options for the rapidly diversifying terrestrial arthropods. Beyond the global atmospheric hyperoxia[68] would have reduced the limitation of seasonal aquatic hypoxia,[69] favoured infaunal penetration of marine sediments, allowed denser aggregations, and increased body size of some groups. (Graham, *et al.*, p. 119)

Marine plants would also benefit from the water vapor canopy:

> A model of the Earth's carbon cycle over the past 570 Myr suggests that, compared to its present value, the partial pressure of CO_2 (P_{CO2}) may have been an order of magnitude higher[70] in the early Palaeozoic, and about 4-6 times higher in the middle Mesozoic. (Yapp and Poths, p. 342)

This would provide both larger numbers and more kinds of organisms to be fossilized by the flood. The growth of marine life would be enhanced by the higher level of both oxygen, carbon dioxide, and the increased barometric pressure.

> The solubility of a gas in a given liquid is considered to be a specific property of the gas because its solubility differs from that of other gases in the same liquid. For example, at 0° and 760 mm, one liter of water dissolves 0.0489 liter of

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[66] Filamentous is threadlike or composed of long threadlike parts.
[67] Ventilatory is of, relating to, or provided with ventilation.
[68] Elevated oxygen levels.
[69] Lowered oxygen levels.
[70] 16 times higher.

> oxygen, … The solubility of a gas in a liquid can be increased by increasing the pressure on the gas. This relationship is quantitatively expressed by Henry's Law: **The weight of a gas that dissolves in a definite volume of liquid is directly proportional to the pressure on the gas.** This means that if 1 g of a gas dissolves in 1 liter of water at one atmosphere of pressure (760 mm), 5 g will dissolve at 5 atmospheres of pressure. (Nebergall, *et al.*, p. 173) Emphasis in original – MRF.

This added oxygen dissolved in the oceans would have enhanced the growth of marine and aquatic animals in the antediluvian marine and aquatic environments. In addition, the added carbon dioxide would have enhanced the growth of marine plants. Probably some species of life were made extinct by the reduced oxygen and carbon dioxide levels of the oceans. *Henry's Law* is easily illustrated by observing the release of pressure on a carbonated soft drink when the lid is removed. Carbon dioxide is released from the drink when the lid is removed and the drink spews forth from the bottle.

The greater density of the atmosphere would have made it easier for flying animals to fly (the lift of their wings would have been greater because of the greater air density). Fossil birds (found in Antarctica) called pelogornithids had wingspans of about 21 feet (6.4 meters). Some petrosaurs apparently had wingspans of 9 meters (29.5 feet). In addition, the greater density would have provided extra protection from meteorites (they would be more likely to burn up in the denser atmosphere). An increase in the air density would have made the winds blow at a slower speed, but they would have more force because of the greater mass of air moving.

The Water Vapor Canopy and Radiocarbon Dating

Radiocarbon (carbon 14 or $_6C^{14}$) is produced by several mechanisms, mostly from cosmic radiation. The nuclei of hydrogen atoms and high energy neutrons are thought to be sent out by the process of nuclear fusion in the Sun and other stars. This will be discussed in more detail in Chapter 14 (cf. p. 326). These particles are traveling at high rates of speed

and collide with the nuclei of nitrogen atoms (changing them into carbon 14). Since water vapor is lighter than nitrogen the nitrogen would be confined to the lower atmosphere. High energy neutrons and protons from the Sun would be stopped by the water vapor and would not collide with nitrogen atoms to create carbon 14. Radiocarbon dating techniques assume that the amount of radioactive carbon entering the atmosphere has been constant. If the Fox Flood Model (FFM) is sound, the antedulivian production of carbon 14 would be far less (minuscule) than the postdulivian production of carbon 14. The assumption is also made that the amount of radiocarbon in the atmosphere is at equilibrium, and this is not true either. The nitrogen atom becomes carbon 14 by the following nuclear process: ${}_7N^{14} + {}_0n^1 \rightarrow {}_6C^{14} + {}_1p^1$. After a period of time it decays back to ${}_7N^{14}$ by the following nuclear decay process: ${}_6C^{14} \rightarrow {}_7N^{14} + {}_{-1}\beta^0 + \nu$. Radiocarbon dating will be discussed in more detail in Chapter 13 (cf. pp. 259 through 283).

Such a water vapor canopy would shield the Earth from cosmic radiation and would make any accurate radiocarbon (carbon 14) dating of fossils which lived prior to the flood impossible. The following facts are essential to understanding this assertion: (1) the waters above the firmament was a water vapor canopy, (2) the 40 days of rainfall (Gen. 7:4) dissipated the water vapor canopy and reduced the barometric pressure, (3) large amounts of oxygen were entrapped in the sedimentary rocks, (4) the carbon in the carbonate rocks contains no measurable radiocarbon, and (5) the flood occurred about 3,000 BC. These five facts prove that there was no radiocarbon in the antediluvian atmosphere. Several arguments will be set forth in this book giving reasons for the lack of radiocarbon in the antediluvian atmosphere.

The Ozone Layer

Ozone (O_3) is produced when the diatomic (two atoms in the molecule) oxygen molecule O_2 is separated into two separate oxygen atoms (O). The two oxygen atoms then join with two oxygen molecules O_2 to form two ozone (O_3) molecules.

If this canopy had a dense layer of ozone (O_3) under it, this would prevent the penetration of ultraviolet rays to the surface of the Earth.

> Oxygen is the most abundant element in the earth's crust … It exists primarily as O_2 in the air but another important and lifesaving allotrope[71] of oxygen, ozone (O_3), is present in the upper atmosphere (the stratosphere). There it absorbs the powerful ultraviolet rays from the sun that would otherwise penetrate to the surface and damage living organisms. (Malone, p. 146)

This would also provide one mechanism for the longevity of antediluvian mankind. This is because very little ultraviolet radiation (uvb and uvc) or cosmic radiation would be able to penetrate such an ozone layer and harm mankind. Ultraviolet radiation (uvc) is used to sterilize; hence it kills. Cosmic radiation will kill both plants and animals. The longevity of mankind began to decline after the flood, and it is, therefore, related to the flood in some manner. This could easily explain the differences between antediluvian animals and postdiluvian animals. This follows because reptiles continue to grow all their lives and anything which prolongs their lives will increase their sizes. The skeletons of most mammals stop growing after the mammal reaches adulthood. The skeletons of elephants, kangaroos, wallabies, beavers, sloths, and a few other mammals continue growing after adulthood.[72] Most fish, corals, and other sea creatures continue growing after adulthood. The pattern of growing after adulthood is called *indeterminate growth*.

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[71] An allotrope is two or more molecular forms of the same element. (For example, oxygen normally exists as O_2 which entails two atoms of oxygen to form one molecule, but under certain conditions oxygen can form O_3 which entails three atoms of oxygen to form one molecule [this allotrope is called *ozone*.])

[72] This might explain the large kangaroos that were found by I. A. Kerr (pp. 1-24) – it is possible that they were just a present kind of kangaroo that lived longer – that is it grew larger strictly because it lived longer – or because it lived immediately after the flood (before the full-effects of the flood had set in). This might also explain the giant ground-sloths and giant beavers – they might just be old animals.

This would also explain how mankind could marry close relatives without any apparent effects from inbreeding. Genetic mutations are the result of such things as any radiation and/or some chemical contamination. These would not be present in Noah or his sons but would build up with time. Sarah was the half-sister of Abraham (Gen. 20:12), yet apparently Isaac had no adverse mental or physical effects as a result of such a union. Abraham lived 175 years (Gen. 25:7); therefore, the effects of mutation had not become fully manifested.

When the ozone layer is dissipated by chlorine, the process is accelerated by the presence of water vapor.

> Chemically, water vapour is the primary source of the hydroxyl radical in the atmosphere. Recent work has shown that water vapour concentration determines the effectiveness of the heterogeneous[73] reactions that destroy ozone in the lower stratosphere. An increase in water vapour could thus lead to greater ozone loss. (Oltmans and Hofmann, p. 146)

The reader should be aware that water vapor would not destroy the ozone layer without the presence of halogen[74] gases. The destruction of the ozone layer by halogen gases will be discussed further in Chapter 10 (cf. p. 170).

Ozone dissipates a wide range of the ultraviolet spectrum. Berkner and Marshall have an extensive discussion of the absorption with equations and absorption coefficients for those who might want to calculate the absorption of the various atmospheric components (pp. 229-237).

Ultraviolet light is also absorbed by water vapor. "Summarizing these absorption data, important absorption by water vapor extends upward to 1900-2000 Å[75]." (Berkner and Marshall, p. 231) With the absorption of ultraviolet light by large amounts of water vapor there would not be a need for a

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[73] Heterogeneous is consisting of dissimilar or diverse ingredients or constituents.

[74] Any of the five elements chlorine, fluorine, bromine, iodine, and astatine.

[75] The symbol Å is the abbreviation for an Angstrom unit. $1 \text{ Å} = 1 \times 10^{-10}$ m.

large amount of ozone to protect organisms from ultraviolet light. According to Berkner and Marshall (p. 248) 10 meters (*32.8 feet*) of water will absorb all of the harmful ultraviolet radiation. According to Black 1 meter (*3.28 feet*) of water will absorb 95% of the γ (gamma) radiation with an energy level of 1.5 MeV[76] (p. 230). The equivalent of about 32 feet (10 meters – the canopy) should absorb all harmful radiation.

Atmospheric Absorption of Electromagnetic Radiation

Tarbuck and Lutgens wrote:

> As stated earlier, gases are selective absorbers, meaning that they absorb strongly in some wavelengths, moderately in others, and only slightly in still others. When a gas molecule absorbs light waves, this energy is transformed into internal molecular motion, which is detectable as a rise in temperature. Nitrogen, the most abundant constituent in the atmosphere, is a rather poor absorber of all types of incoming radiation. Oxygen (O_2) and ozone (O_3) are efficient absorbers of ultraviolet radiation. Oxygen removes most of the shorter wavelengths ultraviolet radiation high in the atmosphere, and ozone absorbs longer-wavelength ultraviolet rays in the stratosphere between 10 and 50 kilometers. The absorption of ultraviolet radiation in the stratosphere accounts for the high temperatures experienced there. The other significant absorber of incoming solar radiation is water vapor, which along with oxygen and ozone accounts for most of the solar radiation absorbed within the atmosphere.
>
> For the atmosphere as a whole, none of the gases are effective absorbers of radiation with wavelengths between 0.3 and 0.7 micrometer. This region of the spectrum corresponds to the visible range, to which a large fraction of solar radiation belongs. This explains why most visible radiation reaches the ground and why we say that the atmosphere is transparent to incoming solar radiation. (p.

[76] MeV = Mega electron-Volts (million electron-Volts). 1 MeV = 1.602×10^{-13} Joules.

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Postdiluvian Conditions Prevent Formation of a Water Vapor New Canopy

At least seven postdiluvian conditions prevent the formation of a new canopy. The *first* condition is the presence of mountain ranges. Mountain ranges create wind currents which tend to mix the air and prevent the formation of an extensive water vapor canopy. In the western United States, both the Sierra Nevada mountains and the Rocky Mountains have extensive snowfall on the western slopes and very little rainfall on the eastern slopes. This occurs because the prevailing winds carry moisture from the Pacific Ocean eastward across the continent. In this manner the mountain ranges are a barrier to the movement of water vapor across the land masses. The Himalayan Mountain range prevents north-south, and adversely affects the west-east, movement of air on the continent of Asia. Searle states:

> Nevertheless, it seems likely that the uplift of a feature as large and as high as the Tibetan plateau and the 2,500-km-long Himalayan mountains would have had a profound effect on global circulation, climate and erosion. The uplift of Tibet would have disrupted the west-to-east air flow across the Northern Hemisphere, initiated the monsoon-driven wind systems across India and increased the precipitation along the Himalaya, with higher chemical erosion rates causing a drawdown of atmospheric carbon dioxide and resulting in global cooling. (p. 18)

The *second* condition is the presence of volcanoes. Volcanic eruptions send large amounts of dust, chemicals, etc., into the stratosphere and this tends to prevent the formation of a new canopy. If an extensive canopy were to begin to form, it would be destroyed by the eruptions of volcanoes. Volcanoes will be discussed more extensively in Chapter 10 (p. 170).

The *third* condition is the presence of ice caps at or near the geographic poles of the Earth. This ice creates cold air that moves toward the equator and moves under the warmer air

and causes strong wind currents. Wind lifts dust particles from wind erosion of the soil into the upper atmosphere, and these particles also prevent the formation of an extensive water vapor canopy.

The *fourth* condition is that oxygen is stored in the carbonates (limestone etc.), oxides, etc. of the crust of the Earth. The Earth's crust contains the equivalent of "53 bars[77] of CO_2." (Hunten, p. 915) This is considerably more than enough oxygen to give the 35-40% postulated by this author. The CO_2 would lose its carbon to the abundant number of plants in the antediluvian environment giving large amounts of oxygen O_2. In the antediluvian canopy this oxygen was compressed by the water vapor which was in the upper atmosphere. With this oxygen stored in the Earth's crust it cannot form a water vapor canopy.

The *fifth* condition is that the organic matter buried in the sediment laid down by the flood limits the amount of oxygen O_2 in the postdiluvian atmosphere.

> Oxygen gas, O_2, is present in today's atmosphere at a concentration of 20.9 percent. The most important long term processes affecting this concentration are O_2 production by the burial of organic matter in sediments … (Berner and Canfield, p. 334)

The *sixth* condition is that the postdiluvian atmosphere and biosphere interact and produce a condition which prevents formation of another canopy. Under the heading of "Biogeochemical Feedbacks" D. Hartmann says

> Perhaps the strongest and most direct means by which organisms affect climate is through their control of the composition of the atmosphere. The concentration of carbon dioxide in the atmosphere is determined by a complex set of processes, but a key process is the uptake of carbon dioxide by plants in the surface ocean and on land …
>
> The primary source of condensation nuclei for cloud

[77] 1 bar = 14.5 lbs/in^2 ≈ 1 atm (1 atm = 14.7 lbs/in^2= 1.013×10^5 N/m^2).

> droplets over the oceans is the production of sulfurous gases such as dimethyl sulfide by tiny organisms in the surface waters. In the atmosphere these sulfur-bearing gases are converted into sulfuric acid particles, which form the nuclei around which cloud droplets form by condensation of water vapor. (p. 250)

If the antediluvian barometric pressure exceeded the Pasteur point so that these organisms did not produce sulfur-bearing gases, this would give another reason why there was no antediluvian rainfall – clouds would not be produced. The production of sulphur-bearing gases is not limited to marine environments.

> On the continents, the breakdown of organosulphur compounds during fermentative[78] decomposition of organic matter is probably the most important mechanism for the release of sulphur volatiles. Due to the difficulty in obtaining representative data from land biomass, the magnitude of this flux is still poorly known. (Charlson, *et al.*, p. 655)

This would also explain why there is postdiluvian rainfall and would be one reason why the water vapor canopy cannot form again. The Pasteur effect is discussed extensively by Lehninger. (pp. 536-538 and 849)

Since the first edition of this volume was published (2000), there is scientific evidence that dimethyl sulfide is produced by phytoplankton under hypoxic (anaerobic) conditions in the oceans (Omori, Yuko; Tanimoto, Hiroshi; et al., 2015). Since it is produced on land by fermentative processes (Charlson, *et al.*, p. 655 [quoted above]), and fermentative processes are anaerobic, it was not produced in the antedulivian environment. (Dimethyl sulfide is only produced organically, it is not produced inorganically.) This supports the FFM hypothesis that there were no clouds, no rain, and no rainbows in the antedulivian world. This becomes a double-edged sword – it means that when the atmosphere had 35% oxygen and about 3 times the present barometric pressure (claimed by some AAOEC), there should not have been very many clouds

[78] Fermentative is the causing or producing of a substance that causes fermentation; or that which relates to or is produced by fermentation.

and very little rain. Cloud droplets are also formed on salt particles, dust particles, and volcanic dust. If there were no antediluvian volcanoes, this would give more reason to believe there was no antediluvian clouds or rain.

The *seventh* condition is that the production of sulfurous gases (D. Hartmann, p. 250) changes the albedo[79] of the Earth.

> Clouds of liquid water droplets form only in the presence of CCN[80] … Changing the size distribution or concentration of the CCN causes the size distribution of cloud droplets to change, which could affect the coalescence and rain production process and possibly the time-averaged cloud cover. However, the effect which is well established (and which we think to be the most significant effect) is that changes in the size distribution of droplets would
>
> the reflectance (albedo) of clouds … This leads to a decrease in mean radius, which causes an increase in total surface area of droplets in the cloud and thus an increase of cloud albedo. (Charlson, *et al.*, pp. 656-658)

Any changes in the albedo of the Earth will affect the temperature of the Earth and the amount of water vapor being generated by evaporation.

Several of these conditions are linked in an article by Berkner and Marshall:

> Content of water vapor in the atmosphere is limited by condensation and precipitation. Below the supercooling temperature limit, -40°C (above about 10 km), the content of water vapor diminishes rapidly and the well known stratospheric "cold trap"[81] prevents significant convective circulation of water vapor upward above about 10 km. (p. 234)

Prior to the flood the water vapor canopy would absorb most of the energy in both the infrared and ultraviolet spectrums and would elevate the temperature of the water vapor. The elevated temperature of the water vapor would move the "cold

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[79] Ratio of reflected light to total light.

[80] Cloud condensation nuclei.

[81] A cold trap is a layer of the atmosphere that is substantially colder than the layers both above and below it (MRF). -40°C = -40°F

trap" above the 10 km level and allow more water vapor to be stored in the atmosphere.

It is probably not possible to have a canopy of the same nature as that which the Earth had before the flood because of postdiluvian conditions. The upper atmosphere might support larger amounts of water vapor than it presently has, but it is probably not possible to have amounts even near what existed in antediluvian Earth.

Concluding Remarks

From the biblical and extra-biblical evidence, it is evident that the *waters above the firmament* was a water vapor canopy which possibly supported a canopy of ozone. This canopy was lost during the flood and because of postdiluvian conditions will probably not re-occur. This canopy was the source of the forty days of rainfall during the flood of Genesis 6-9. This helps to explain a number of matters (such as the longevity of both mankind and animals, the large size of some antediluvian animals, the absence of rainfall before the flood, etc.) and makes reliable radiocarbon dating of antediluvian organisms impossible.

DINOSAURS AND THE FLOOD

CHAPTER SEVEN

Introduction

Did dinosaurs exist? If so, what was their nature? What caused them to exist in the antediluvian environment and what caused their demise in the postdiluvian environment? Does the Bible mention, either implicitly or explicitly, dinosaurs? No reasonable person can deny that large reptiles (dinosaurs) existed at some time in the past. This author has personally observed the skeletal remains[82] of these animals in museums. This author believes that the Bible speaks of such animals.

Does the Bible Mention Dinosaurs?

It is the contention of this author that the Bible mentions dinosaurs, both explicitly (in the Hebrew) and implicitly. Adam named all of the animals (Gen. 2:19-20); therefore, he must have named the dinosaurs. (Some claim that Adam only named the beasts of the field or animals that were to be domesticated.) The names of animals in the Hebrew language depict some aspect of the animal. For example, the word "goat" means "*hairy* or *rough*." (Gesenius, p. 792) Many of the dinosaurs, particularly those that lived in the water, had long extended necks and tails. This would explain the name given in Gen. 1:21.

The word *dragon*, which probably refers to dinosaurs, is found in several passages of the Old Testament (KJV). This word comes from a Hebrew root word which means: "to extend or stretch out." (Gesenius, p. 869) By comparing the Hebrew root word, it is evident that the Scriptures depict an animal which is extended or stretched out as a dinosaur with a long or extended neck. This word is used in Gen. 1:21 and Ezek. 32:2 (whales KJV and sea monsters ASV). The rod of Aaron which

[82] Note that some skeletal parts in museum exhibits are manufactured.

became a serpent (KJV – Ex. 7:9) could have become a large reptile (note the footnote ASV). Job used this word in Job 7:12 (whale KJV and sea monster ASV). It is evident that this word refers to several kinds of animals by noting this word in the following verses: Ps. 74:13 (dragon KJV, sea monster ASV), Ps. 91:13 (dragon KJV, serpent ASV), Ps. 148:7 (dragon KJV, sea-monster ASV), and Isa. 27:1 (dragon KJV, sea monster ASV). This Hebrew word תנים – pronounced *tannîyn* (Strong's #H8577) is found 23 times in the Hebrew Scriptures.

Since Noah took (God sent – Gen. 6:20; 7:7-9 and 13-16) a pair of every kind of animal (Gen. 6:19-20) into the ark, he must have taken dinosaurs into the ark also. The fact that Noah took seven clean animals into the ark could help account for the greater abundance of clean animals. No reptile was considered a clean animal. Even to this day there exist reptiles which grow quite large (crocodiles, alligators, python snakes, large land tortoises, etc.). A good point in question is the dragon lizard[83] of Komodo (cf. Kern, pp. 872-880). This reptile attains a length of about 10 feet (about 3 meters) and weighs over 300 pounds (1,334 Newtons [a mass of 136 kilograms]). "The largest specimen ever recorded, a male received by the St. Louis Zoo in 1933, measured 10 feet, 2 inches, and weighed 365 pounds." (Kern, p. 875) The "Komodo dragon is capable of killing goats, calves, and even humans." (Flannery, p. 44)

Why could not Noah have taken a pair of 4-year-old Komodo dragons into the ark (weighing 5 or 6 pounds [26.7 Newtons {a mass of 2.7 kilograms}] each) instead of the much heavier older ones? There would have been ample space on the ark to accommodate the younger reptiles (since they are quite small). Actually, there was ample space to take the larger reptiles into the ark. Since it was God's purpose to repopulate the Earth with animals after the flood with the animals on the ark, He would have taken younger animals onto the ark. This would be true because a younger animal would live longer and produce more offspring. It is likely that the animals that entered the ark would not only have been young but would

[83] *Varanus komodoensis*.

have been ready to produce offspring as soon as they exited the ark. This means that He probably did not send baby animals into the ark, but juvenile animals that were just about ready to breed.

If all (or at least most of) the sedimentary rocks were deposited during the flood, the dinosaurs would have perished during the flood. This follows because the bones of the dinosaurs were buried during the flood (when the sedimentary rocks were deposited). The dinosaurs must have been alive during the lifetime of Noah. The aquatic dinosaurs would not need to be brought into the ark since they could live in the ocean.

What Caused the Extinction of Dinosaurs?

The entrapment of the basic building blocks of life such as carbon, calcium, potassium, magnesium, zinc, boron, etc. when fossils were deposited by the flood would decrease the life expectancy of plants, animals, and mankind. The results of deficiencies in some minerals are set forth in Chapter 17.

Some other aspects of this were discussed in Chapter 5 (cf. p. 43). The sorting of the elements and minerals in the soil by the flow of the water, as discussed in Chapter 5, would decrease the elements available and create a situation of poor nutrition (cf. p. 50 – ff.). This would reduce the life expectancy of both humans, animals, and plants (cf. Chapter 17).

In addition, the dissipation of a water vapor canopy, as discussed in Chapter 6 (cf. p. 60), would subject both plants and animals to radiation which would decrease life expectancy of both. If this canopy supported an ozone layer, it would shield the Earth from harmful ultraviolet radiation. Even without an ozone layer, the canopy itself would shield against radiation. The harmful effects of ultraviolet light (UV-B and UV-C)[84] are presently being acknowledged by scientists. Some pharmaceuticals and chemicals act as photosensitizing

[84] Ultraviolet UV-B is involved in our bodies making vitamin D-3. Virtually all of the UV-C radiation is absorbed by the ozone layer. UV-A gives us a Sun-tan and excess UV-B gives us a Sun-burn.

agents and increase the effects of UV radiation from sunlight or other sources. These agents include thiazide diuretics, drugs used in the treatment of high blood pressure, certain antibiotics (tetracyclines, sulfonamides), cosmetics, and thiazine tranquilizers. Even some plants (carrots, dill, celery, figs, lemons, etc.) enhance the effects of UV radiation – particularly if we get juices from them on our skin – causing phytophotodermatitis. Any good physician will warn his patient if a pharmaceutical that he prescribes has these effects.

Another factor not previously discussed is the creation of unstable molecules (free radicals): (1) by electric discharges (lightning etc.) such as ozone (O_3), hydroxyl (OH), hydroperoxyl (HO_2) (2) by burning such as carbon monoxide (CO), or (3) by other means. These unstable molecules are assimilated by the body through eating, drinking, and/or breathing and become part of the cells of the body. The cell is damaged when the unstable molecule changes form. This damages the organism, and its life expectancy is diminished. Any factor that would reduce the life expectancy of reptiles would reduce their average size since reptiles continue to grow all their lives.

Some mammals also continue to grow all their lives (elephants, sloths, beavers, kangaroos, etc.). This might explain the ground sloths (they were old sloths who could not climb trees because of their size – weight). This might also explain the giant beavers that were frozen with the mammoths (they were old beavers). This might also explain the giant kangaroos in the fossil records (they were old kangaroos). Another possible explanation of the ground sloths, giant kangaroos, and giant beavers is that they might be a genetic variation of their kind. There exist pygmy elephants (they are nearly extinct) and pygmy humans (they are nearly extinct). These pygmy versions are merely genetic variations of their kinds. There are many animal kinds that have pygmy variants.

The influx of radioactive isotopes of the elements in living

organisms (carbon 14 etc.) would also reduce the life expectancy of these organisms. Both cosmic rays and high energy neutrons can produce radioactive isotopes. If these isotopes were not present before the flood, all living things, including the dinosaurs, would have a longer life expectancy. Natural radiation is sometimes called *background radiation*. This radiation is present in virtually everything with which humans come in contact. Black states: "in man, natural radiation is responsible for 12% of the spontaneous mutation rate." (p. 232)

The lowering of the level of oxygen in the atmosphere (cf. p. 65) and the decrease in the atmospheric pressure (cf. Chapter 6 pp. 62-63) would reduce the size of many animals. Prior to the flood some animals reached gigantic sizes (cf. Graham, pp. 1031-1045). "By the mid-late Carboniferous, the largest insects that ever lived exhibited wingspans of more than 60 cm [≈ *24 inches – MRF*]." (Shear, p. 287)

> Gigantism occurred in the Protodonata (dragonflies; wing span of 71 cm [*28 inches – MRF*]), the Ephemeroptera (mayflies, 9-20 cm), the giant Carboniferous dragonfly *Meganeura monyi* had a thoracic diameter of about 2.8 cm (*1.1 inches – MRF*). (Graham *et al.*, p. 118)

Even mammals grew larger (cf. the fossil record) which was probably attributed to the conditions. The oxygen diffusion dependence of animals is a limiting factor in the size of the animals.

> August Krogh's (1919) pioneering comparative study of tissue O_2 permeabilities established the quantitative basis for diffusion limitation and led to formulation of relationships of O_2 consumption (V_{O_2}), O_2 permeability (the Krogh diffusion constant, K), shape, and size … One form it takes shows the maximum body size possible for diffusion dependence $r \leq (6KP_{O_2}/V_{O_2})^{½}$ where r is the maximum effective dimension an organism can obtain, P_{O_2} is O_2 partial pressure at its surface, V_{O_2} and K are as defined above, the 6 is a constant for body shape (6 for a sphere). (Graham, p. 1031)

This formula was used by Graham, *et al.* to argue for an

oxygen level of 35% and an increased barometric pressure. They explain the large sizes and high density of both aquatic and terrestrial animal life.

> An increased global oxygen supply during the Mid-Devonian to late Carboniferous would have enhanced diffusion-dependent processes such as respiration. Accordingly, certain organisms could attain larger body size. And increased aquatic oxygen concentration and greater oxygen penetration into benthic substrates would permit greater biomass densities in most habitats … Relative to dimensions dictated by the present atmospheric level, organisms in 35% oxygen could have a 27% greater diffusive distance, allowing for thicker constructions, less work invested in gas exchange, and greater body size. (Graham *et al.*, p. 117)[85]

This is precisely what is found in the sedimentary record left by the flood. This explains the disappearance, either apparent or real, of many kinds of animals. These animals could not survive in the postdiluvian atmosphere and reduced oxygen level (hypoxia) of the oceans and atmosphere.

Consideration of Some Theories About Dinosaur Extinction

AAOEC have theorized that the dinosaurs were made extinct by disease, a comet hitting the Earth, an asteroid hitting the Earth, the eruption of volcanoes, the Earth going through a galactic dust cloud, etc. (cf. Barnes-Svarney, p. 23). None of these theories have credible evidence.

The most commonly advocated theory at the time of the writing of this treatise is the asteroid/comet theory.

> Most geologists agree that a sizable comet or a smallish asteroid struck the Yucatan coast at the same geologic instant as the last of the dinosaurs disappeared 65 million years ago, along with many other creatures. (Kerr, 1993, p. 1518)

Many scientists have raised the question "… about whether

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[85] It appears that Graham does not consider the effect of an increased barometric pressure – from *Henry's Law*.

that impact packed enough punch to make the dinosaurs disappear." (Morell, 1993, p. 1518) This theory has a problem explaining the survival of climate sensitive animals, such as plankton and turtles, from the Cretaceous into the Tertiary periods, but the extinction of the dinosaurs, some of which lived in the polar regions (cf. Clemens, pp. 503-506). Brouwers *et al.* discuss the discovery of dinosaur bones found on the Alaskan North Slope:

> They are size-sorted, with the largest elements and densest concentration near the base of the bed. The matrix is a dark brown, carbonaceous siltstone containing scattered calcareous concretions; both lithologies contain large amounts of plant debris and roots, but rare fossil wood. (p. 1608)

Dinosaurs were either much more adaptable than some think, the climate in northern Canada was not cold in the past, and/or both. Brouwers *et al.* state:

> If the North Slope dinosaurs were not migratory, their occurrence at high northern, Late Cretaceous latitudes provides direct evidence of the ability of some species to tolerate up to several months of darkness and to cope with cold air temperatures. Thus, some of the proposed effects of impacts of an asteroid or comets, increased volcanism, or related hypotheses may not have been the direct cause of the demise of the dinosaurs. (p. 1610)

The antediluvian water vapor canopy provided a mechanism for the climate in northern Canada to be mild (cf. pp. 63-65).

Why did not the asteroid impact kill other kinds of animals (birds, mammals, reptiles, amphibians, etc.)? This theory has many problems which need to be answered.

> Many, although not all, of the proposed mechanisms by which bolide impacts and/or volcanism lead to mass extinctions rely on massive injections of material into the stratosphere, where it may remain for many years. By contrast, injections of large quantities of aerosols into the troposphere should have only transient and local effects, since excess material is washed out of the troposphere on a timescale of weeks … It is not obvious that either large-

> scale volcanism or bolide impacts could loft enough material into the stratosphere for long enough periods to have global effects of a magnitude necessary to explain mass extinctions. (Emanuel, *et al.*, p. 13,756)

The *punctuated uniformitarian* model is unable to offer a reasonable explanation of this question. After discussing these problems, Shaw properly states: "*A first-order scientific task awaiting an imaginative ecologist is to rationalize the observed extinction patterns in terms of the above stresses*." (p. 209) The flood model proposed by this author (FFM) easily explains the preservation of these animals (the Lord preserved them on the ark). The AAOEC needs to concoct a new model for his system (one that will explain why these species did not become extinct when the Earth was supposedly impacted by bolides at the supposed K-T boundary).

Most toxic materials contained in comets, asteroids, or large meteorites cannot survive the temperatures generated by impact with the Earth. The conversion of the kinetic energy of the bolide into heat will raise the temperature of the object so high that most chemical bonds will be destroyed.

> As organic compounds in meteorites volatilize more readily than do noble gases (~400°C compared to 800° to 1600°C), the fraction of organic compounds surviving the impact must have been even less than 3×10^{-5}. For this reason, it is also unlikely that toxic substances from the meteorite, such as HCN,[86] were a major cause of the extinctions. (Wolbach, 1985, *et al.*, p. 167)

The dust cloud theory is advocated by Yabushita and Allen (Anonymous #4, *Sky & Telescope*, p. 14). This theory has the problem of not having enough dust on the surface of the Moon. Large amounts of any dust clouds would be swept from space by the Jovian planets before the cloud reached the Earth. Any dust must be in orbit around the Sun or the massive gravity of the Sun would rapidly accelerate it into the Sun if the solar wind did not push it out from the Sun. "The cloud's gas and dust would overwhelm the outflowing solar wind."

[86] Hydrogen cyanide or hydrocyanic acid.

(Anonymous #4, *Sky & Telescope*, p. 14) There is no evidence that the intensity of the solar wind has diminished; in fact, it is claimed that the solar wind has not changed.

> There is no evidence in the lunar samples of any changes in the intensity and frequency of solar flares, the solar wind, or the galactic cosmic radiation as far back as we can look into the history of the Moon. The solar wind has not changed for 4.5 billion years. Thus the lunar studies may indicate that the Earth's ice ages were not triggered by changes on the Sun as had been speculated. (Burgess, p. 119)

The claim that the solar wind has not changed for 4.5 billion years is based upon uniformitarian suppositions. The *dust cloud* theory cannot be substantiated, and it has insurmountable problems.

Berner theorizes that a reduction in the amount of oxygen in the atmosphere was a contributing factor in the extinction of the dinosaurs.

> Weathering of organic matter results in the uptake of O_2 from the atmosphere, and a lowering of atmospheric oxygen might have contributed to the Permo/Triassic extinction. (1989, p. 603)

No doubt Berner is at least partially correct in his assessment, but he is wrong on the dating of the event. Erwin, a macroevolutionist, has a better grasp of the situation: "The cause of the end-Permian mass extinction appears to involve a tangled web rather than a single mechanism." (p. 231)

Hyperbaric Chambers and Longevity

Hyperbaric chambers have been used to accelerate the healing of burn victims and other injury victims. These chambers have oxygen enriched air under higher pressure than one normally experiences. A water vapor canopy would cause the antediluvian atmospheric pressure to be greater than the normal pressure today. A greater pressure might accelerate the growth of dinosaurs and also increase their longevity. The absence of this elevated barometric pressure would lower the life expectancy of both men and animals (including dinosaurs).

Some of the conditions of hyperbaric chambers are not the same conditions in which antediluvian man lived. In many instances, hyperbaric chambers are used with 100% or near 100% oxygen. This level of oxygen cannot be sustained for extended periods of time because of the toxicity of oxygen. The antediluvian atmosphere was not 100% oxygen, but the percent of oxygen might have been greater than the present level. Some experimentation has been done with reduced levels of oxygen.

> Live bacteria, including S. aureus and E. coli, were injected into the dermis of guinea pig backs. Heat-killed bacteria in the same concentration were injected as a control in order to determine the influence of bacterial protein on the lesion size. Half of the animals were injected with ampicillin 6 mg intraperitoneally. The inoculated animals were then caged in controlled environment and breathed 45%, 21% or 12% oxygen. The guinea pigs were examined at 24 and 48 hours, and the dimensions of the infectious necroses[87] that developed at each inoculation site were measured. The results revealed in fact, that the effect of raising oxygen tension was marginally superior to that of giving antibiotics. The most important finding was that hyperoxia and antibiotics were additive, so that only rarely was there evidence of infection seen in animals treated with both hyperoxia and antibiotics, while every injection site became infected in hypoxic animals that had not received any antibiotics. (Hammarlund, p. 22)

Hyperbaric therapy has even affected the eyes –

> … causing a blurred distant vision or a sudden ability to read without glasses. It is presumed to be due to changes in the lens, either a change in the shape or a change in the refraction. (Hammarlund, pp. 28-29)

It is possible that the changes in the barometric pressure affect the shape of the eyeball and the vision thereby. This greater pressure would keep the eyeball from changing its shape as easily. Hyperbaric therapy aids the human body in combating bacteria, parasites, and fungi (cf. Park, et al, pp.

[87] Necroses is the death of a cell or of a portion of tissue in a living organism.

144-154).

There are some problems with hyperbaric chambers, but many of these problems are related to actions of increasing the pressure and/or decreasing the pressure (compression and decompression). This was not a problem in an environment in which they were born into the increased pressure and lived every day in this environment. Those on the ark were decompressed over a period of 40 days and did not have any problems adjusting to the decompression. The danger of decompression sickness (commonly called *the bends* by scuba divers) is the reason that 100% oxygen is used in hyperbaric therapy. In addition, 100% oxygen is more efficient in getting oxygen into the bloodstream than say, 35% oxygen. This author was unable to find much information on sustained elevated air pressures with elevated oxygen levels (with levels greater than 21%, but less than 100%). The only research this author could find was done by Hammarlund (p. 22).

What was the pressure and percent of oxygen in the antediluvian atmosphere? This author considers the most likely atmospheric pressure to be from 2 to 2 1/2 times the present atmospheric pressure. The percentage of oxygen was probably higher than it is now, but the level was low enough not to cause oxygen toxicity in the antediluvian people and animals.

> The optimum dose of oxygen has not yet been established. It is clear that most individuals with wounds require no additional oxygen, whereas others require a very high dose of hyperbaric oxygen to achieve healing. There is likely a specific dose for each individual but, unfortunately, much work is still needed in this area. (Sheffield, p. 44)

The percentage of oxygen was probably between 35% and 40% (cf. the following section).

The key to understanding the effects of increased barometric pressure caused by the water vapor canopy is in remembering that this had the ability to help to prevent disease (prophylactic) and not so much in the ability to cure (therapeutic) disease. Prevention is more important than

cure![88] If neither bacteria, parasites, nor fungi can grow as rapidly in this environment, the defense mechanisms of the human body can more easily combat them.

What Some AAOEC Claim for the Oxygen Level

Obviously, AAOEC do not recognize the biblical flood of Genesis 6-9 as an historical fact. They claim that both the oxygen level and barometric pressure of the atmosphere were higher in the past than they are at the present time. Berner (1989) claims the oxygen content of the atmosphere was almost 40% about 290 million years ago (cf. p. 604). Graham *et al.* claim the oxygen level in the late Palaeozoic was about 35% (p. 117). The dating of these times by the uniformitarian geologists are in error, but their assessments of the oxygen content are probably correct. The added oxygen would increase the barometric pressure. In addition, the water vapor canopy would also increase the barometric pressure.

Extra Biblical Evidence of Dinosaurs Being Contemporary with Man

In nearly every ancient culture there exist traditions of dragons. These dragons, according to the drawings, resemble dinosaurs. The very fact that these traditions are quite widespread, and the drawings are so similar to what some dinosaurs looked like gives credibility to the belief that they actually existed. Imagine what one would think if he were to encounter a very large reptile whose breath would be a vapor on a cold morning and whose tongue resembles flames of fire. One might just, as the ancients did, think he saw a fire-breathing dragon. The ancients also spoke of giant sea creatures which could wreck a ship, and some of their drawings resemble some of the aquatic dinosaurs.

The Scriptures speak of sea monsters (ASV) in several passages (Ps. 148:7; Job 7:12; etc.). Mankind would have feared these **dragons** and would have consequently killed

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[88] Remember the old adage – and ounce of prevention is worth a pound of cure. (Metric – a gram of prevention is worth a kilogram of cure.)

them. In addition, they would not have lived as long because of the change in the conditions after the flood;[89] therefore, they could not compete as well with mammals.

Many of these dinosaurs probably exist in modern times in the form of much smaller varieties. It is likely that God sent the smaller variations of each kind to the ark because the larger variations would not be suitable for the postdiluvian world. For example, the horned toad[90] of the United States, the thorny devil[91] of Australia, the mountain horned dragon[92] of Asia, the round-tailed horned lizard[93] of the United States, all resemble the ankylosaurias. There exists an iguana with three horns and would probably resemble some dinosaurs in the *ceratopsia* suborder. The Jackson's chameleon[94] has three horns. One can multiply these examples with the tuatara of New Zealand and many others. (The tuatara is discussed in the 1996 *National Geographic Magazine*, Anonymous #5). If these lizards (reptiles) could grow for 500+ years they would be like large dinosaurs.

The oceans are quite large, and scientists are still finding many species that were once thought to be extinct.

> Lazarus taxa disappear from the record during the Late Permian, but did not become extinct, for they reappear in Middle Triassic rocks. First recognized in gastropods,[95] the phenomenon is widespread among bivalves, brachiopods and other taxa, demonstrating both the extent of sampling problems and the importance of undiscovered refugia in preserving many lineages. (Erwin, p. 231)

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[89] Decreased atmospheric oxygen level, decreased barometric pressure, increased radiocarbon in the atmosphere, increased cosmic radiation reaching the ground, less fertile soil, colder temperatures in some parts of the Earth, and unstable molecules (ozone etc.) being produced.
[90] Scientific name *phrynosoma*
[91] Scientific name *Moloch horridus*
[92] Scientific name *pricklenape agamas*
[93] Scientific name *phrynosoma modestum*
[94] Scientific name *Trioceros jacksonii*
[95] Gastropods are any of a large class of mollusks (as snails and slugs) usually with a univalve shell or none and a distinct head bearing sensory organs.

Some animals, once thought to be extinct, have been found (the coelacanth, etc.) and many more Lazarus taxa might be found in the future.

A reptile which weighed over a ton (a mass of over 900 kilograms) existed in Australia when humans first arrived in Australia.

> Before the arrival of humans, the largest carnivores in the region were *Wonambi,* a 110-pound pythonlike snake with a 12-inch girth; a giant land crocodile known as *Quinkana;* and a goanna-a kind of monitor lizard-called *Megalania.* Weighing as much as a ton, and more than twenty feet long, *Megalania* would have dwarfed present-day reptiles. (Flannery, pp. 43-44)

If humans could live contemporaneously with carnivorous reptiles in Australia after the flood, it is evident that they could also live with reptiles that large before the flood. Antediluvian mankind would have been superior to postdiluvian man, both physically and mentally, if the hypotheses of this book are correct.

Were the Dinosaurs Reptiles?

Scientists have for a long time discussed whether or not dinosaurs were ectotherms[96] or endotherms.[97] Barrick and Showers used the ratio of the two stable isotopes of oxygen ($_8O^{18}$, oxygen-18 and oxygen-16, $_8O^{16}$) in the bones of a Tyrannosaurus Rex skeleton to determine if it was warm-blooded or cold-blooded. They concluded that it was warm-blooded and not cold-blooded (pp. 222-224).

In reply to this argument Ruben

> … argues that Barrick and Showers have jumped to conclusions without studying enough about modern endotherms. Mammals, says Ruben, sometimes keep their limbs much cooler than their bodies. (p. 63)

"Chinsamy has other reasons to doubt the findings. In her own preliminary studies of *T. rex* bone, she has found growth rings,

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[96] Ectotherms are cold-blooded animals.

[97] Endotherms are warm-blooded animals.

a characteristic of ectothermic animals." (p. 312) Monastersky discusses this problem extensively (1994, pp. 312-313).

Kolodny also argues:

> all these isotopic signals might say more about the bone's decay than their temperatures during life. Kolodny himself sprinkled that bit of cold water on the evidence for warm-blooded dinosaurs when, after the talks by Showers and Barrick, he discarded his own planned talk and launched into a cautionary tale. He now sees isotopic and geochemical signs that the calcium phosphate of fossils may not be the calcium phosphate of the bone of the living animal; ground water may have dissolved the original mineral and replaced it with different phosphates. (Kerr, 1992, p. 487)

Some of the arguments relate to the temperature of the extremities of the bodies of the dinosaurs. The reader should remember that the antediluvian environment had a stable temperature (cf. p. 63). They are merely proving that the dinosaurs were homeotherms.[98]

> "To assume that a homeotherm is an endotherm is a weak argument at best," says John Ruben, a zoophysiologist at Oregon State University at Corvallis. "The dinosaurs may well have been homeotherms – their bulk alone[99] would have generated enough heat to create a stable body temperature. But every physiologist knows that homeothermy tells us nothing about an animal's metabolic rate." (Morell, 1994, p. 188)

Dott and Prothero agree with this assessment (cf. pp. 434-435).

Warm-blooded animals have thin bones or cartilage in their nasal passages called *respiratory turbinates*.[100] These turbinates humidify and warm the air entering the lungs and dehumidify the air as the animal exhales.

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[98] Homeotherms are animals having their blood the same temperature in all parts of the body.

[99] This is sometimes called inertial homeothermy.

[100] Turbinate bones: conchae; three bony layers in the nasal passages.

> Their presence in a fossil animal signals endothermy … scans of several theropod dinosaurs showed no evidence of respiratory turbinates in these active predators … That puts a chill on the idea of endothermic dinosaurs. (Monastersky, 1995, p. 330)

Dinosaurs were probably cold-blooded and not warm-blooded. As reptiles (cold-blooded animals), they grew all their lives. This is in accord with the growth rings found by Chinsamy, the lack of turbinates in the nasal passages, the fact that they laid eggs like reptiles, and other similarities of the dinosaurs to reptiles.

Some of the flying animals associated with dinosaurs were evidently endotherms.

> After all, pterosaurs could not be active fliers if they were not endotherms. In fact, one pterosaur fossil shows impressions of hair, indicating that they had some kind of furlike insulation. This would make sense only if they were small-bodied endotherms trying to prevent heat loss. (Dott and Prothero, p. 435)

Pterosaurs seemed to have been much like bats. The fur on some bats is so short that it would not be evident from the fossils.

The antediluvian atmosphere probably increased the oxygenation of the body of any animal or man who was subjected to the increased pressure and oxygen content in the air, just as hyperbaric chambers do in modern hospitals. This would enable both the cold-blooded and warm-blooded animals to have better circulation in their extremities. This would enable both cold-blooded and warm-blooded animals to survive on an equal basis. After the flood, the reptiles could not compete with the mammals, except in certain specific niches.

Problems with Biblical Words

Another problem is the definition of the word **kinds** in Gen. 1:11, 12, 21, 24-25, and 6:20. This author is certain that it is

not equivalent to the word *species* since the species idea comes from the macroevolutionary theory.[101] There is no doubt that God allowed for a wide range of genetic variations in each *kind*. One can be certain that the St. Bernard and Chihuahua dogs are from the same *kind* since they can breed and reproduce. This is one criterion for a kind as set forth in Genesis 1. The variation between the St. Bernard and the Mexican Chihuahua is quite extensive. Could there not have existed a like variation in the reptile kinds? Is it not possible that the larger variation of the reptiles was killed off because of a change in the environment or by man himself because of his fear of them? Another possibility is that God knew these larger variations of the reptiles could not survive after the flood, and that He only directed that the smaller variations should come into the ark. Either of these explanations is plausible.

Why Doesn't the Bible Use the Word *Dinosaur*?

The word *dinosaur* entered the English language in 1841.[102] Sir Richard Owen coined this word in the 1841 edition of *Report of the British Association for the Advancement of Science*. Owen joined two Greek words together (*deinos* [δεινός "*fearful, terrible, dread, dire …*" {Liddell and Scott, p. 176}] and *saura* [σαύρα "*a lizard*" {Liddell and Scott, p. 724}]). So, a dinosaur is a terrible (or fearful) lizard.

The King James Version (KJV) of the Bible was translated in 1611 and was later revised circa 1765. The 1769 version is the one that is used today. Obviously, this could not be in either the original (1611) KJV or the revised KJV (1769). The KJV to some extent set the standard for words used in the English Bible.

Another factor is that some of the translators do not believe that humans existed at the same time as dinosaurs.

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[101] Scientists cannot agree on the definition of the word *species*.
[102] See Merriam-Webster on this word for the 1841 date.

Concluding Remarks

There is no doubt that dinosaurs existed, were killed in the flood, and existed after the flood. The nature of the antediluvian atmosphere partially explains the longevity of the dinosaurs. The great longevity explains the large sizes of the dinosaurs since they were probably reptiles. Some of these dinosaurs exist today in forms which are smaller than the antediluvian dinosaurs. The basic premises of this book explain both the existence and extinction of the dinosaurs.

THE PROBABLE MECHANISM USED TO BRING ABOUT THE FLOOD

CHAPTER EIGHT

Introduction

This author has attempted to synthesize the information from the Scriptures, the laws of nature, and the physical evidence into a reasonable explanation of how God brought about the flood. A number of theories have been postulated by various theists. Because so many theories have been advanced many people have pre-conceived ideas. Christians should be willing to discard these ideas and logically examine the Scriptures, the laws of nature, and the physical evidence (cf. Chapter one).

Miraculous or Providential?

The Scriptures clearly state that God brought the flood upon the Earth (Gen. 6:17). But what mechanism did God use to bring about the flood? Two factors are set forth in the Scriptures: (1) the breaking up of the fountains of the deep (Gen. 7:11-12) and (2) the rainfall (Gen. 7:11-12). With the present physical conditions, there cannot be a worldwide rain which could cause a universal flood covering the mountains (Gen. 7:19). The Christian has three alternatives when he explains Genesis 6-9 to an unbeliever either: (1) the rain was caused by a miracle, (2) the rain was caused by physical conditions not present today, or (3) the rainfall was only a minor part of the flood and the breaking up of the fountains of the deep was the major factor causing the flood. The third position is the one that this author asserts to be true.

The question of whether God brought the flood by a miracle or by providence (operating through natural laws) is a very important question. The Bible does not explicitly state that the flood was caused by a miracle. Miracles had six purposes in the Scriptures: (1) the revelation of the will of God (Jn. 16:12-14), (2) the confirmation of the will of God (Mk. 16:20), (3) the incarnation of Jesus (Isa. 7:14), (4) the creation of

heaven and Earth and all living things (Gen. 1:1), (5) canonization of Scripture (1 Cor. 14:37), and (6) dissemination of the Scriptures (Mt. 23:34). Since this instance does not conform to either revelation, incarnation, creation, canonization, or dissemination, it must be for confirmation, if it were a miracle. It would serve no purpose to perform a miracle and continue that miracle for almost one year after the unbelievers were dead! This argument can be answered by claiming that there is a seventh purpose of miracles. This author has encountered people who affirmed that God miraculously placed the fossils in the Earth to deceive mankind. This is ridiculous since God is not deceitful.

John C. Whitcomb states "some very important aspects of the Flood involved an outworking of natural laws and processes through the *providence* (as contrasted with the supernatural intervention) of God." (1983, p. 19) Whitcomb lists

> … six areas in which supernaturalism is clearly demanded in the doctrine of the Flood: (1) the divinely-revealed design of the Ark; (2) the gathering and care of the animals; (3) the uplift of the oceanic waters from beneath; (4) the release of waters from above; (5) the formation of our present ocean basins; and (6) the formation of our present continents and mountain ranges. (1983, p. 19)

This author agrees with Whitcomb that God employed miracles (supernaturalism) in the first two areas.[103] This treatise will demonstrate that there are no compelling reasons to interpret the last four areas as supernatural events. Whitcomb correctly states: "God refuses to do *miraculously* what man or natural processes can accomplish through His *providential direction*. God maintains a definite *economy of miracles*." (1983, p. 67)

One of the basic principles of Bible interpretation (hermeneutics) is that one should not assert any event is miraculous without compelling evidence. Normally an event is to be understood as non-miraculous rather than miraculous because the miraculous is an exception to the general rule.

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[103] The gathering of the animals was miraculous (Gen. 6:19-20), but the care of the animals was not necessarily miraculous (Gen. 6:21 – cf. Oard).

What compelling evidence can be given for claiming the flood was caused by miraculous events?

Questions Atheists Have Asked

This author shall ask some questions that atheists have asked him and/or others on this subject. These questions are difficult to answer if one thinks the forty days of rain caused the flood. *First*, why did the water not begin to decrease until 110 days after the rain stopped (Gen. 8:3)? *Second*, why did the ark not float toward the ocean, which would be normal for a vessel under these conditions? *Third*, why are sea (marine) creatures buried under and in the sedimentary rocks of the Earth? This is difficult to answer since they cannot swim against the raging currents that would result from a flood caused by rainfall. *Fourth*, why did the ark come to rest upon a mountain (or near a mountain) since the water should have flowed away from high ground, if it were only caused by rainfall (Gen. 8:4)? The Christian is obligated to give an answer to everyone who asks him about his hope (1 Pet. 3:15). Peter discusses the flood in the context of this passage where he reveals that part of the Christian's hope is based upon the flood (1 Pet. 3:18-21). The Christian trusts in God and in His Word (all of it, including Genesis 6-9).

It is apparent that since the flood waters did not begin to abate until 110 days after the rain ceased (Gen. 8:3) the rain had very little to do with the flood. The expression *the fountains of the deep* gives a good explanation of the flood. This is particularly true since the fountains of the deep were stopped at the same time the waters began to decrease (Gen. 7:24-8:3). The word *deep* almost always refers to the oceans in the Scriptures (compare Jonah 2:5 and Lk. 8:31). Hence, this author contends that the Lord brought waters out of the oceans to cover the land (2 Pet. 3:5-6 and Isa. 54:9). The Psalmist states that the deep (oceans) covered the Earth during the flood (Ps. 104:5-9). This refers to the flood because: (1) the mountains were covered (Ps. 104:6) as during the flood (Gen. 7:20) and (2) God set a boundary so that the water would not again cover the Earth (Ps. 104:9) which is equal to the

statement of Gen. 9:12-13.

This answers all four questions of the first paragraph of this section. If the oceans (deep) were the primary source of the flood waters, the flood would not decrease until the oceans were stopped from overflowing the Earth (fountains stopped Gen. 8:2). If the water flowed out of the oceans and covered the land and came in successive overflowings (successive tides), it would carry sea creatures over the land and deposit them in layers (strata of rock). If water flowed out of the oceans and covered the land, it would not necessarily carry the ark to the oceans and might carry it toward a mountain or range of mountains. Tides rotate (amphidromic circulation – due to the *Coriolis Effect*), acting like a giant centrifuge which would cause lighter objects to move to the outer portions of the rotating water.

The objections of one atheist are:

> How exactly did the land reemerge? (In traditional terms, how was 'the pond drained'?) Did *all* kinds of land animals go on Noah's ship? If so, why are there so many kinds that are unrecorded in "post-Deluge" strata? How were the domestic economies managed during the voyage of the Ark? Obviously, the *mechanisms* of the whole episode could stand considerably more description … Flood Geology shows no promise of fruitful interchange with other sciences … "scientific" Creationism would force us to abandon well-developed related theories, without any hint of how to construct replacements … Why are bottom-dwelling marine invertebrates found in *all* levels of the strata? Why are some very delicate marine invertebrates, which would have been likely to sink more slowly, found in the very lowest levels? Why are all the 'modern' fishes (the *teleostean* fishes, which, on the standard account, emerged only in the age of dinosaurs and became spectacularly successful as the reign of the dinosaurs came to its end) found only in … "late Flood" deposits? Why do these particular fishes not occur, as other fishes do, at lower levels, while marine reptiles of similar size are found only much lower? … What were the mechanics of the flood? How

were the animals preserved? (Kitcher, p. 128)

These questions asked by Kitcher will be addressed in this treatise. For example, anyone who has observed tides and their effects on the beach can see a number of sea creatures on the beach, but rarely does he see fish, unless the fish has died. The preservation of some fossils more than others is discussed earlier (p. 45-ff.). This author has walked on beaches and has seen all sorts of creatures of the type mentioned by Kitcher (bottom dwelling marine invertebrates etc.) on the beach. The fish usually swim back out to sea against the tide. This is precisely what occurred if the flood was of a tidal nature.

The arguments made by Kitcher (above) take either one of the following three forms: *First*, it is possible that Kitcher is making the following invalid (unsound) argument:

First Premise: If the flood model can explain the physical phenomena better than the AAOEC model, then the flood model is more reasonable. (This is axiomatic.)

Second Premise: The flood model cannot explain the physical phenomena better than the AAOEC model.

Conclusion: The flood model is not more reasonable.

This argument (in form by Kitcher) contains the logical fallacy of *denying the antecedent* (cf. p. 35-ff.). In addition, the second premise *begs the question* (cf. Chapter 18).

Second, it is possible that Kitcher is making the following valid argument (valid – properly constructed, but not necessarily sound):

First Premise: If the AAOEC model can explain the physical phenomena better than the flood model, then the AAOEC model is more reasonable.

Second Premise: The AAOEC model can explain the physical phenomena better than the flood model.

Conclusion: The AAOEC model is more reasonable.

The second premise of this argument *begs the question* (cf. Chapter 18) and it will be disproven repeatedly in this treatise and this will prove that this argument is unsound.

Third, it is possible that Kitcher commits the logical fallacy of an *appeal to ignorance* (*argumentum ad ignorantiam*).

> When the premises of an argument state that nothing has been proven one way or the other about something, and the conclusion then makes a definite assertion about the thing, the argument commits an **appeal to ignorance**. The issue usually involves something that is incapable of being proved or something that has not yet been proved. (Hurley, p. 128)

Copi states:

> The *argumentum ad ignorantiam* is committed whenever it is argued that a proposition is true simply on the basis that it has not been proved false, or that it is false because it has not been proved true. But our ignorance of how to prove or disprove a proposition clearly does not establish either the truth or the falsehood of that proposition. (p. 91)

This fallacy is committed by arguing that no flood model has explained certain physical phenomena and assuming that no new flood model can be constructed that would explain these phenomena. The AAOEC reserves for himself the right to reconstruct his model to explain more physical phenomena but denies that right to the theist! By this the AAOEC is also guilty of the fallacy of *special pleading*.[104]

Planets and the Flood

Since it was established in the prior sections of this Chapter from the Scriptures that God brought the waters of the oceans (deep) upon the land, one now naturally asks how this was accomplished. The Scriptures state that the waters (oceans + rainfall) overflowed the land (2 Pet. 3:6). This implies that the flood was of a tidal nature. It is this author's contention that God providentially brought a planetary body close to the Earth and that this planet caused very high tides which covered the Earth. (*Note: For a more thorough discussion of tides refer to the references on tides section at the end of the bibliography section* – page 547.)

God often used the flood as a warning of His judgment (Lk.

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[104] *Special pleading* is a form of hypocrisy in which a person applies a set of rules to his opponent that he is not willing to apply to himself.

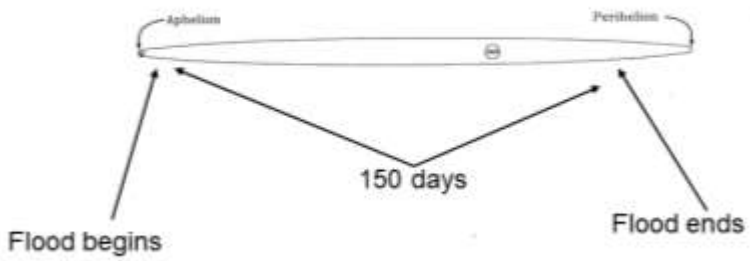
17:26-27, 2 Pet. 3:4-8, etc.). God used the flood as a warning to Israel in Amos 5:7-9. Note that He associates planets (Pleiades ASV and Orion verse 8) with the flood. The Hebrew word (כסיל – [Strong's #H3685] pronounced *kesîyl*) translated "Orion" means a silly, burly, or fat star (fat in the middle) (Gesenius, pp. 407-408). The Scriptures reveal that Orion has rings or bands (Job 38:31). Since the Hebrews did not make any distinction between a star and a planet this probably refers to a planet with rings like Saturn. The rings of Saturn are comprised mostly of ice particles that are extremely cold (near absolute zero -459° F, -273° C).

Consider the physical effects of a planet coming close to the Earth. If a planet came sufficiently close to the Earth to cause tides of 20,000 feet deep (6,096 meters), the planet would: (1) have to be very close to the Earth (closer than the Moon, which causes tides of over 50 feet (15 meters) in some localities [Macmillan, pp. 63 and 78-79]), (2) the mass of the planet would have to be less than the mass of the Earth, otherwise it would pull the Earth with it, (3) the Earth would have to nearly capture the planet as another moon in order to give the 150 days of the breaking up of the fountains of the deep (Gen. 7:24-8:5). This is explained by the fact that the Earth's orbit is not circular in nature, but elliptical (egg shaped) and the Earth is sometimes closer to the Sun than at other times (cf. Figure 1). If the planet approached the Earth when the Earth was at (or near) its aphelion[105] (which occurs July 4 [cf. p. 125]), the Earth would have its greatest influence upon the planet. If the gravitational field of the Sun did not capture the planet before the Earth's perihelion[106] (which occurs January 3), the planet would probably be captured as a moon. Since the time of the Earth's revolution around the Sun is about 365 ¼ days, the time between the aphelion and perihelion is about 182 days. Hence the time of the tidal activity must be less than 182 days. The period of 150 days for the breaking up of the fountains of the deep as recorded in the Word of God allows for a 32-day period in which the Sun could capture the planet, causing the waters to abate (Gen. 8:3). It is the contention of

[105] Greatest distance from the Sun.
[106] Nearest distance to the Sun.

this author that the planet that caused the flood (probably Mercury) made three and one-half revolutions around the Earth before it was pulled away from the Earth by the Sun.

Figure 1



Earth and the planet would conserve angular momentum, and the planet would experience an increase in velocity as a result of causing tides in the Earth's oceans, atmosphere, and land. This increase in velocity would aid the planet in escaping the gravitational field of the Earth. This is the same principle (the conservation of angular momentum) by which an ice skater spins faster as he pulls his arms toward his body while spinning and increases the speed of his rotation. The Moon is presently moving away from the Earth for this very reason.

> At present the average Earth-Moon distance is 384402 km [238,856 mi. – MRF]. This distance is increasing with time as a result of tidal effects, by about 4 cm/yr. at present. (Encrenaz, Bibring, Blanc, p. 151)

This is based upon the law of conservation of angular momentum.

> Thus, while the tidal forces are slowing down the rotation of the earth, the moon's revolution about the earth is becoming faster and faster. This effect on the moon could have been predicted on more general grounds: the law of the conservation of angular momentum. (Clancy, p. 199)

Tides Move in Different Directions

The tides of the oceans caused by the Moon and Sun move in very complicated patterns. These movements are really oscillations of the water within the confines of the ocean.

> It has been shown in Chapter III that a particle in motion tends to be deflected to the right in the northern hemisphere and to the left in the southern.
>
> Consequently, in the northern hemisphere, a rectilinear E./W. stream of appreciable velocity would develop a south component when running to the east and a north component when running to the west, with the result that it would rotate 360° in clockwise direction throughout the tidal cycle, and if magnitudes and directions were plotted hourly the line joining them would describe an ellipse the major axis being parallel to the directions of the maxima of the primary stream, the minor being in the meridian and a measure of the gyroscopic deflection. (Macmillan, pp. 123-124)

The tides move in different directions and even rotate. This would provide extremely complicated patterns for the deposition of the sediment. One part of the tide would pull land animals out toward the sea and another would pull sea creatures onto the land, all at the same time. Some parts of the water would be going north and other parts would be going south. It is impossible to place exact figures on these tides without knowing the planetary distance, shape of the land mass over which the tides (fountains of the deep) flowed, and the depth of the water. This rotation of the tidal waters would not necessarily deposit the sediment in the ocean basins.

What Causes Tides?

Under the heading of *Tidal Forces* Wolfson and Pasachoff state:

> When the gravitational field is uniform, all parts of a freely falling body experience exactly the same gravitational acceleration. But over large enough scales gravity is always nonuniform, and the acceleration of

> gravity varies from place to place. The result is a force that tends to stretch or compress an object.
>
> Ocean tides are an important manifestation of this force, in which the oceans are stretched by the nonuniform gravitational forces of the moon and Sun. For that reason the forces associated with the variation in gravitational field from place to place are called **tidal forces**.
>
> Tidal forces arise not from gravity itself, but from *differences* in gravity … the tidal force therefore drops even more rapidly with distance than does gravity itself, being inversely proportional to the *cube* of the distance. That's why the moon is the dominant influence on ocean tides; even though the Sun's gravity is much stronger at Earth than is the moon's, the distance from the Sun is so great that the moon's *tidal* effect is greater. (p. 221)

Planets and Mountain-Building

AAOEC admit that they do not have a suitable mechanism that explains orogenesis (mountain building). J. Wilson states:

> When the cause of orogenesis can be stated in precise physical terms and when the result of repeated application of the fundamental orogenetic process can be shown to be adequate to produce the complexities of geology, then geology and physics of the Earth will have merged. This has not yet been achieved. (1952, p. 445)

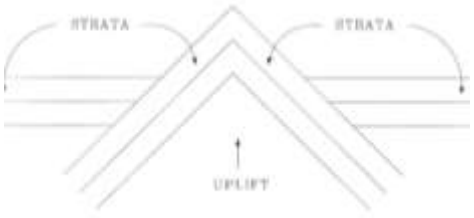
Eardley, in discussing the process of mountain building, states: "the cause of the deformation of the earth's outer layers and the consequent building of mountains still effectively evades an explanation." (p. 189) Eardley discusses the weaknesses of several theories of mountain building. Hapgood sums up the inability of the AAOEC uniformitarian geologist to explain mountain-building processes: "Yet it is agreed by geologists that no theory has so far satisfactorily explained mountain building." (1970, p. 193)

Another factor which the Scriptures associate with the flood that can be partially explained by the gravitational field of a

planet is the building of mountains. It is evident from the extra-biblical evidence that the mountains were formed during the flood. The manner in which the rock strata is laid on mountains is evidence that the strata was laid, then the mountains were raised (see Figure 2). If the mountains existed prior to the flood, all the strata would be deposited as in Figure 3. Some mountains are like those in Figure 2 and then are almost completely covered by the sedimentary rock as in Figure 3. What one sees in this case is the fact that the mountains were raised early in the flood and then successive tides covered them with sediment.

Figure 2

Figure 3



The gravitational field of a planet would also interact with the magma of the Earth and would elevate the crust of the Earth to help form mountain ranges. The moon causes tides in the crust of the Earth (Defant, pp. 112-117).

> According to Tomaschek's measurement in Marburg, the M_2 land tide has an amplitude of roughly .5 m, i.e. the earth's surface rises and falls twice daily by .5 m (20 inches). Naturally this rise is imperceptible, as there is no fixed point from which to measure the fluctuations, since the observer standing on the earth undergoes the same motion. (Defant, p. 114)

David G. Smith discusses this phenomenon under the heading *Solid tides*.

> Sensitive instruments capable of measuring small changes in the local gravity or small tilts of the Earth's crust indicate that the solid Earth is also subject to tides, implying that the Earth does not respond as a rigid body to the gravitational attraction of the Sun and Moon. Typically, an observer on the Earth's surface will move up and down in twelve hours by as much as 500 mm (0.*5 meter or about 20 inches – MRF*). At the same time gravity on the surface will change fractionally. This is a solid or elastic tide. Its amplitude is a function not only of the magnitude of the tide-raising force but also of the elastic properties of the Earth. (pp. 100-101)

Since gravitational forces are "inversely proportional to the *cube* of the distance" (Wolfson and Pasachoff, p. 221), the forces would have been extremely large with a planet coming within about 30,000 miles of the Earth. These would be forces of the order of magnitude that could raise mountain ranges. If the Moon came to within 15,000 miles of the Earth, its tidal forces would be about 4,096 times what it is now. If the present gravity of the Moon causes the surface of the Earth to rise by .5 meters and the forces were increased by over 4,000 times, the surface of the Earth would rise by over 2,000 meters (6,560 feet). If the planet that caused the flood came within 15,000 miles of the Earth and had the mass of the planet Mercury, it would raise the surface of the Earth by over 9,000 meters (over 29,520 feet). Some mountains were probably elevated while the rock was still in a plastic state (pliable). The Rocky Mountains in the United States were probably elevated by this mechanism. After the surface of the Earth fractured it

would be considerably easier to elevate it into mountain ranges. The Sierra Nevada Mountains in the United States were probably elevated when the crust was fractured, and the gravity of the planet that caused the flood (probably Mercury) lifted one portion of the crust higher than the other portion. This is one probable mechanism that caused orogenesis.

The ASV says the mountains rose and the valleys sank down during the flood (Ps. 104:8). The Scriptures do not refer to mountains prior to the flood and the Psalmist in Ps. 90:2 implies that they did not begin at the creation. Any mountains raised in the early stages of the flood would appear older[107] than those raised in later stages of the flood. Each pass of the planet would constitute a different stage of the flood. The massive erosion caused by successive overflowings (successive tides) of the waters of the great deep would severely erode the mountains which were raised in the early part of the flood. Since the tides cause forces in different directions, they would tend to cause plates or sections of the crust of the Earth to move in different directions as well (*if such plates exist*).

The plate tectonics theory is based upon uniformitarian geologic assumptions. The assumption is made that plates exist in the crust of the Earth and have been moving slowly (at the same rate they are presently moving). There is some evidence to support the contention that some parts of the crust of the Earth are presently moving. (*From this point onward in this book it will be assumed that these plates exist although the existence of these plates is based more upon theory than on observation.*) Two systems have been used in the last decade to measure this movement in at least some of the plates. The *first* system is called Satellite Laser Ranging (SLR) and the *second* is called Very Long Baseline Interferometry (VLBI).

> The Satellite Laser Ranging system employs ground-based stations which bounce laser pulses off satellites whose orbital positions are well established. Precise timing of the round-trip travel of these pulses allows scientists to calculate the precise locations of the ground-based stations.

[107] Older when dated by uniformitarian assumptions.

> By monitoring these stations over time, the relative motion of the sites can be established.
>
> The Very Long Baseline Interferometry system uses large radio telescopes to record radio signals from very distant quasars (quasi-stellar objects). Since quasars lie billions of light years from earth, they act as stationary reference points. The millisecond differences in the arrival time of the same signal at different earthbound observational sites provides a means of establishing the distance between receivers. (Tarbuck and Lutgens, p. 199)

This rate of movement is extrapolated backward in time to prove that the continents have moved apart for several hundred million years. This extrapolation is based upon uniformitarian assumptions (a constant movement with time). If these plates moved apart, it was during the flood and occurred rapidly. In the opinion of this author the evidence does not support the contention that there was extensive movement. Present movement does not prove that past movement occurred. The sudden changes in the angular momentum (cf. pp. 106-107) brought about by the flood and phenomena associated with the flood have caused and continue to cause the movements of the plates. Eardley discusses several weaknesses in the continental drift theory (pp. 206-209). The *plate tectonics* theory is a modification of the continental drift theory. One weakness is the fact that the plates seem to move in different directions and the AAOEC has no suitable mechanism to explain this divergent motion. The movement of some of these plates together probably caused some mountain ranges to be uplifted. The Himalayan Mountains were probably elevated by this mechanism.

The primary evidence for plate tectonics is based upon magnetic field reversals. The evidence for reversals is linked to the remanent magnetism[108] in rocks in the Earth. The evidence of reversals cannot be projected beyond about 5 million years (cf. p. 302 for a more complete discussion of this

[108] The residual magnetism of a ferro-magnetic substance when the magnetizing field is reduced to zero.

time limit).

Two other factors that probably interacted to produce the mountain ranges will be considered in later chapters. Volcanic processes have obviously elevated a number of mountains in places such as Hawaii (cf. Chapter 10). Mountain building is probably a complex process resulting from at least three, and possibly four, processes.

Deposition of Sediment

If the flood model postulated by this author (FFM) is correct, it would explain how there are varying layers of sandstone and shale. Sandstone, conglomerate, and rocks which are composed of large objects give evidence of having been laid by turbulent waters. Shale and other rocks composed of fine grain materials, such as silt, give evidence of having been laid by slow moving waters.

During the flood the planet which caused the flood approached the Earth at varying distances. Since the gravitational forces which produce tides vary inversely with the cube of the distance of the planets (Wolfson and Pasachoff, p. 221), there were considerable differences in the tidal forces during the 150 days of the "breaking up of the fountains of the deep." Different parts of the Earth experienced different levels of the tides as the Earth rotated on its axis during the revolution of the planet around the Earth. There were, no doubt, times in which the flood waters were quite turbulent (creating sandstone etc.) in one region of the Earth and then a few hours later the flood waters were quiescent (creating shale).

Other Effects of a Tidal Flood

A tidal flood would move seawater across the continents and deposit salt in the sediment. The saltwater formations that are encountered by those drilling for petroleum are easily explained by a tidal flood coincidental with a reducing barometric pressure (from the dissipation of the water vapor canopy). Areas that are arid tend to have large amounts of salt

to come to the surface if they are irrigated. This tends to destroy the fertility of the soil. These areas did not have sufficient rainfall to move this salt back to the oceans by runoff after the flood.

Some areas were landlocked to such an extent that the water could not run off to the oceans. Lake Bonneville and Lake Lahontan, in the western United States, are examples of areas that do not drain into the ocean. "Such lakes are called pluvial lakes (Latin: 'of rain') because they formed at times of increased rainfall and reduced evaporation" (Ordway, p. 134) This theory of the formation of these lakes does not explain how these large amounts of moisture crossed the mountain range to the west of these lakes. Lake Bonneville[109] had a surface area of 47,800 km^2 and Lake Lahontan had a surface area of 14,700 km^2 (cf. Hostetler, *et al.*, p. 665). These lakes were filled during the flood and because of the low rainfall in the area they began to evaporate, and the Bonneville Salt Flats in Utah and a similar area in Nevada are the remains of these lakes. The Great Salt Lake and several small lakes, which are sustained by the streams at their present levels, are all that are left of these lakes. The present lakes have a combined area of 8,700 km^2. This reduced water surface lowered the evaporation in the region that lowered the rainfall in the region.

Concluding Remarks

It is the conviction of this author that the flood of Genesis 6-9 did more to shape the face of the Earth than any event since creation. Note that Peter reveals that the antediluvian world perished (2 Pet. 3:6). The Earth has changed so much that Peter says the former world perished. In defense of these thoughts on this subject, this author will appeal to the physical phenomena along with the Scriptures. This author is not ashamed to do so because David by inspiration used physical evidence to demonstrate the existence of God (Ps. 19:1). Paul by inspiration states that the physical realm gives

[109] https://www.youtube.com/watch?v=AqJweIoLLKQ

evidence that God exists (Rom. 1:18-21). The Lord appealed to physical evidence to show His power (Job 38:1-41:34).

This author concludes that God brought about the flood by providential means. He brought forty days of rainfall (a minor cause of the flood) and the waters out of the oceans to cover the land (the fountains of the deep, the major cause of the flood). This overflowing of the waters buried the land and sea plants and animals in the sediment (preserving the fossils).

There is good evidence that God brought about the flood by providential means by bringing a planet close to the Earth that caused vast tidal activity. This tidal activity was not only in the ocean, but it was both in the magma of the Earth and in the atmosphere (discussed later). The gravity of this planet was one of several phenomena that caused the mountains to rise and waters to overflow the continents.

THE POLAR ICE CAPS

CHAPTER NINE

Introduction

Until the nineteenth century the geologic establishment generally believed there was a worldwide flood. This changed with the discovery of gravel that was related to glaciers. The early flood advocates did not believe that the ice caps (glaciers) were in any way linked with these gravels, that were called "superficial gravels" at that time. Gould states:

> Flood geology was considered and tested by early-nineteenth-century geologists. They never believed that a single flood had produced all fossil-bearing strata, but they did accept and then disprove a claim that the uppermost strata contained evidence for a single, catastrophic, worldwide inundation. The science of geology arose in nations that were glaciated during the great ice ages, and glacial deposits are similar to the products of floods. During the 1820s, British geologists carried out an extensive empirical program to test whether these deposits represented the action of a single flood … field work proved that the superficial gravels were not contemporaneous but represented several different events (multiple ice ages, as we now know). Geology proclaimed no worldwide flood but rather a long sequence of local events. (Gould, p. 134)

The demise of the view that the worldwide flood of Genesis 6-9 caused the geologic formations was linked with the discovery that glaciers were the cause of some of the geologic formations on the Earth. The early *flood models* did not explain the existence of the ice caps. This chapter will consider glaciers, their origin, and their effects.

When the Ice Age theory was first introduced the AAOEC geologists rejected it because they linked it with Catastrophism (probably biblical catastrophism [cf. p. 18]).

> Geology revealed that dramatic changes had occurred in the Earth's flora and fauna, and remarkable fluctuations in the Earth's climates were also discovered. In particular it

> became clear that recently there had been a glacial period during which large portions of the Earth's surface had been shrouded by ice sheets such as those that today survive only in Antarctica and Greenland. The glacial theory began to be developed during the 1820s in Switzerland … In 1836 the idea was taken up by Louis John Rodolph Agassiz (1807-73)[110] and in the following year he began to use the term Ice Age (*die Eiszeit*) and to voice the somewhat exaggerated view that the whole of Europe as far south as the Mediterranean had recently been engulfed by ice flowing southwards from the North Pole … To many, this idea of a glacial deluge seemed dangerously like a reversion to Catastrophism. (David G. Smith, pp. 20-21)

It seems that anything that is linked to the Bible is rejected by the AAOEC without even giving it consideration (cf. Appendix E and Fox, 2024, Appendix V).

Some Aspects of the Ice Caps

The existence of the polar ice caps is a fact that cannot be denied.[111] These ice caps have sub-tropical plants and animals entrapped within the ice. The plants are dated in the Eocene period by geologists (this is based upon AAOEC assumptions). "The fossil flora and fauna of the Eocene Arctic reveal a warm, swampy, subtropical environment, similar to that of the Florida Everglades." (Francis, p. 60) In 1978 the Soviets retrieved a mammoth from the ice and sent part of the meat to the United States for examination. Scientists estimate that it would require temperatures below -200° F (-129° C) to *quick-freeze* a mammoth so that the internal organs do not decompose (cf. Dillow, pp. 5-13).

> The routine histology of the sections thus confirmed our initial observation that the fragment had all the appearances of a fresh bone …
>
> As a further check on the condition of the mammoth bone, we analyzed the bone for total nitrogen and acid-extractable carbonate. The mean value for nitrogen, by the

[110] Lake Agassiz (an ice-age lake) was named after him.

[111] I personally viewed Greenland when I flew over it twice.

> Kjeldahl method, was 4.2 percent by weight; for the carbonate, 3.4 percent carbon dioxide. These values fall definitely within the range to be expected in fresh, compact mammalian bone. (Ezra and Cook, p. 466)

It is evident that these animals did not die of natural causes (illness) since food is in their mouths and stomachs.

> The remains of plants in the mammoth's mouth, between its teeth, were the same as the stomach contents, and represented food the mammoth had not yet swallowed when it was killed. (Hapgood, 1970, p. 268)

When an animal (or a human) is ill, the body releases chemicals called cytokines that suppress hunger pangs – allowing the body to concentrate its energy to fight the illness. This is what the *sympathetic nervous system* does.

The polar ice caps in both Antarctica and Greenland are 12,000 feet (3,657 meters) thick, in some places. In Antarctica "On the eastern part of the continent, the ice sits three miles thick on solid ground." (Trefil, p. 14) The temperature of the ice has been measured to be below -100° Fahrenheit (-73° Celsius). The ice has been so cold that the permafrost[112] extends to depths of at least 2,000 feet (610 meters).

> Permafrost forms wherever the temperature remains below 0°C (*32°F – MRF*) for a period of at least several years. A layer of permafrost from less than 1 meter to about 600 meters thick underlies at least 27 percent of the total land area of the earth. In the Northern Hemisphere about 7.6 million square kilometers (*2.9 million square miles – MRF*) are underlain by permafrost. (Stokes, p. 373)

Since ice has a tendency to insulate against further temperature changes, it is evident that this ice was extremely cold at some time in order to cause the 2,000 feet (610 meters) of permafrost. Matthews claims that:

> Fossil plants found by Chilean scientists on King George Island put Antarctica's ancient past in a temperate clime … Further proof of the continent's warm ancestry lies in its coal, the transformed remains of forests long dead. Several grades of fossil fuel exist. (Matthews, p. 653)

[112] Permanently frozen ground.

> Five geologists last year drilled and blasted 20 feet (*6 meters – MRF*) to bring out virtually unweathered Antarctic coal. Widespread discoveries of surface coal and petrified wood show that Antarctica had luxuriant vegetation 250 million years and more ago. (Tyree, p. 296)

Laura Geggel claims that Antarctica was covered by temperate rain-forests before the ice was deposited. Geggel claims that sea-level was 558 feet (170 meters) higher than it is now. No doubt, she assumes that the ice is from terrestrial sources (deposited by snowfall). Geggel wrote:

> The world was a different place back then. During the middle of the Cretaceous period (145 million to 65 million years ago), dinosaurs roamed Earth and sea levels were 558 feet (170 meters) higher than they are today.[113] Sea-surface temperatures in the tropics were as hot as 95 degrees Fahrenheit (35 degrees Celsius).

Her assumption of 95 degrees Fahrenheit temperatures is based on incorrect assumptions – she offers no evidence for these temperatures. She cites an article by Klages et al. published April 1, 2020, in *Nature*.

Submarine Canyons

There exist undersea (submarine) canyons on the continental shelves of the continents. These canyons extend outward and downward from the mouths of rivers. Limbaugh and Shepard describe these canyons:

> Canyons on the sea floor have constituted for many years one of the most puzzling features on the face of the earth. Many of these valleys have been cut back into the continental shelf and extend virtually to the coast. Where best known they have the characteristics of river-cut canyons such as are found in mountain ranges or on the escarpments at the margins of plateaus. Thus most of them

[113] She makes this assumption because she thinks that all of the water that is presently in the ice of the glaciers and ice-caps was in the oceans at that time. She does not cite any geological evidence to support this claim.

have rocky walls and are narrow and roughly V-shaped;[114] their floors slope outward almost continuously toward the ocean basin, and they have many tributaries entering from the sides in the common stream pattern. (p. 633)

The atheist, agnostic, and/or old-Earth creationist (AAOEC) has no reasonable explanation of these canyons.[115] They are neither fractures nor rifts in the crust of the Earth. Von Engeln and Caster state:

> Many of the larger submarine canyons … are aligned with the courses of existing streams, notably those opposite the mouths of the Hudson and Congo Rivers. Lesser gashes, in parallel, consequent courses, like a pattern of rain gullies on a slope, reproduced on a grand scale,[116] appear on the continental slope adjacent to the Hudson submarine gorge. …
>
> If the submarine gorges, world-wide in distribution, are truly stream-eroded, geologic science is confronted with alternatives none of which seems possible of realization. One is that sea level in recent times has been 10,000 feet lower than it is now. The other is that the coastal lands of all the continents have been 10,000 feet higher than now; or, possibly, that sea level was 5,000 feet lower and the lands 5,000 feet higher than now, or some other proportion of lowering of sea level and raising of coastal lands to account for the 10,000 feet. Any of these concepts is geologically well-nigh fantastic.[117] …
>
> It may be that in the recent geologic past there was a

[114] The V-shaped nature of these canyons fit the FFM (Fox Flood Model – a tidal flood) but not any AAOECGM (atheist/agnostic/old Earth creationist geologic model).

[115] I do not point out the failure of the atheist/agnostic/old Earth creationist geologic model (AAOECGM) to explain this phenomenon as proof that their model is false because of their ignorance – this would be the fallacy of *appealing to ignorance*. I point out this failure in order to contrast the Fox Flood Model (FFM) with the atheist/agnostic/old Earth creationist geologic model (AAOECGM) to show that the FFM is more reasonable than the AAOECGM.

[116] These *Lesser gashes* conform to the FFM (a tidal flood) but not to any AAOECGM.

[117] These are in harmony with the FFM – a flood caused by tides.

> sudden and short period during which the density of the mobile substratum in which the continents are isostatically floating became significantly greater. Then the continental areas would be made to rise as units, and the ocean floor, concurrently, would sink. The borders of the continents, raised high above sea level, would immediately experience the dissection indicated by the erosion of the submarine canyons, and the associated trenching of the continental interiors would be deferred until after the headwater erosion had extended the canyons across the width of the continental shelf. If the high stand of the continents endured for only a short period and if the return to previous levels (coincident with the present altitudes of land and sea) was as rapid as the emergence had been, the submarine canyons are the record of an otherwise unattested episode in the earth's diastropihic history.
>
> If such conjecture of universal uplift of continents and lowering of sea level is regarded as too preposterous for serious consideration, other hypotheses of the origin of the submarine canyons are no more plausible. None of those so far proposed seems even faintly adequate. …
>
> If escape from the dilemma is sought by denying the current-erosion origin of the canyons, it is necessary to appeal to faulting or slumping of a magnitude without parallel and different in occurrence and form from such phenomena elsewhere on the earth. (pp. 320-321)

Cloud explains the submarine canyons in the Mediterranean Sea:

> The present evidence for a history of deep canyon-cutting erosion all around the Mediterranean coast, however, powerfully reinforces other evidence for once-huge reductions of Mediterranean water-level. The original channel at the mouth of the Rhône is now a kilometer (*3,280 feet – MRF*) below sea level and an even-deeper channel was cut by the 3-kilometer (*9,840 feet – MRF*) descent of the ancient Nile to the Levantine basin. (p. 441)

Ordway explains submarine canyons by the ice age:

> Thus sea level fluctuated as the volume of land ice fluctuated, and it may have been 300 to 500 feet (*91 to 152 meters – MRF*) below its present level during the maximum extent of the glaciers. On the other hand, if all glacier ice on the Earth today melted, sea level might rise approximately 100 to 200 feet.
>
> Various kinds of geologic evidence indicate that sea level fluctuated during the Pleistocene, although exact amounts are uncertain; e.g., the channel with the courses of the Hudson River can be traced seaward on the Atlantic floor for some 90 miles (*145 kilometers – MRF*) to a depth of about 240 feet. Presumably such a channel was cut when sea level was lower. Similar channel continuations occur in association with other rivers. (pp. 130-131)

The explanation by Cloud of the submarine canyons in the Mediterranean is the most reasonable explanation for these canyons, but it is rejected by some AAOEC for canyons in the oceans because their view of the "ice age" does not allow for the ocean level to be low enough to create all of these canyons. Tarbuck and Lutgens state:

> Deep, steep-sided valleys known as *submarine canyons* originate on the continental slope and may extend to depths of 3 kilometers … Although some of these canyons appear to be the seaward extensions of river valleys, many others do not line up in this manner. Furthermore, since these canyons extend to depths far below the maximum lowering of sea level during the Ice Age, we cannot attribute their formation to stream erosion. These features must be created by some process that operates far below the ocean surface. Most available information seems to favor the view that submarine canyons have been excavated by turbidity currents. (p. 310)

Birkeland and Larson (cf. pp. 502-504) agree with Tarbuck and Lutgens:

> The origin of submarine canyons has been debated by geologists for decades. Current thought seems to favor subaerial erosion as a starting point for many canyons. Such erosion would have started with the lowering of sea

> level during Pleistocene[118] glaciations. Yet subaerial erosion could not carve out seafloor canyons as continuous features, because sea level has never dropped far enough to expose entire canyons.[119]
>
> The one exception is the Mediterranean Sea, where the submarine canyons appear to be subaerial. (pp. 502-503)

Turbidity currents are defined as the downslope movement of dense, sediment-laden water (cf. Tarbuck and Lutgens, p. 310). Longwell, *et al.* discuss turbidity currents and state: "only a few small ones actually have been seen." (p. 369) The amount of sediment transported through these canyons is many times more than turbidity currents could transport.

> Abyssal fans indicate that great quantities of sediment have been transported through some canyons. Calculations show that the volumes of sediment lying seaward of some canyons are 10,000 times as great as the volumes of the canyons. In other words, even if each 10,000 passing particles had eroded only one particle, the passing sediment could have cut the canyons. (Longwell, *et al.*, p. 371)

This gives strong evidence that these canyons were not cut by turbidity currents.

Before the flood there was less water on the Earth than there is at the present time. Both the ice caps deposited during the flood and the 40 days of rainfall from the water vapor canopy added a significant amount of water to the Earth. These canyons were cut when the planet that caused the flood pulled large amounts of the oceans over the continents, causing the continental shelves to be above sea level during this tidal action. As the waters ran off the continents they cut these canyons. Rifts were formed in the crust of the Earth as the Earth twisted on its axis during the early stages of the flood. Some of the floodwaters flowed through some of these rifts and created some of the submarine canyons. Because of the tidal

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[118] An earlier epoch of the Quaternary period of uniformitarian geology (which supposedly began about 1.6 million years ago).

[119] Sea-level did drop this much during the flood – because it was tidal in nature.

nature of the flood these canyons were cut in some places which are not seaward extensions of river valleys. In addition, there was a large amount of water left on land in landlocked lakes (pluvial lakes) immediately after the flood. This landlocked water delayed the elevation of the levels of the oceans until these lakes evaporated or overflowed the land barriers (Lake Bonneville flood, Lake Missoula flood, etc.) and flowed to the oceans and fell as rainfall and flowed into the oceans. These assertions will be established in later chapters of this treatise.

AAOEC and the Ice Caps

The uniformitarian geologist is at a loss to explain much of the above-mentioned phenomena. *First*, his idea that snow falling caused the plants and animals to be entrapped is absurd because the plants are sub-tropical in nature and certainly not what one would expect to find in a region in which snow falls. These plants have been found with the leaves intact and fruit upon them which implies both a sudden advent of ice and an advent during summer.

> Baron Eduard Toll, the explorer, reported finding a fallen 90-foot fruit tree, with ripe fruit and green leaves still on its branches, in the frozen ground of the New Siberian Islands. (Hapgood, 1960, p. 75)

> On the island of New Siberia Hedenström discovered immense accumulations of buried trees and, referring to them, called the bluffs on the shore "The Wooden Hills." … plants of "The Wooden Hills" have been found to be of Miocene[120] age. (Tolmachoff, p. 47)

Elephants (mammoths) require large amounts of food (up to as much as 500 pounds [2,224 Newtons {a mass of 226.7 kilograms}] of food per day per elephant). The region must have been a lush region in order to support so many of these animals and other animals like them. All this evidence implies a rapid change in the climate and not a gradual change

[120] AAOEC claim the Miocene age began 26 million years ago and ended 14 million years ago. Modern birds, trees, horses, and elephants were supposed to have evolved (by macroevolution) during this period.

(*punctuated uniformitarianism* or uniformitarianism [cf. p. 18]). It is an utter absurdity to even think of large numbers of elephants living in places which get as cold as northern Canada, because of the lack of an adequate food supply.

> The arctic wasteland is a burial ground for hundreds of thousands of mammoths, a hairy species of elephant, now extinct, that seem to have died … and been quickly deep-frozen, some in *midsummer* … The remains of mammoths are incredibly numerous in Siberia and, strangely enough, their numbers increase farther north toward the Arctic Ocean. (Hapgood, 1960, p. 71)

Tolmachoff discusses the ivory trade from the mammoth tusks and estimates that the mammoths must have numbered in the millions when they were killed.

> Siberia's freezer may hold more than 600,000 tons of ivory, according to Ed Espinoza of the National Fish and Wildlife Forensic Laboratory. (Anonymous, # 7, National Geographic, January 1992, p. 148)

The timing of the quick-freezing of these mammoths is in late July or early August. Hapgood says:

> … a complete mammoth body was found near Siberia's Beresovka River. This animal had apparently frozen to death very suddenly in the middle of the summer. His stomach contents were so well-preserved that the plants he had been eating could be identified. They included buttercups and wild beans in full bloom, a stage they reach only in late July or early August. (1960, pp. 72-73)

Dillow agrees that this occurred in July or August: "The plant remains in the stomach of the Beresovka mammoth indicate that the animal died in late July or early August." (p. 6)

> The hair of this mammoth has been distinguished by the great variety in color on different parts of the body, as well as by the length of hair, and as an indication that the animal had perished late in summer. (Tolmachoff, p. 37)

This timing is in accord with the predicted timing of the flood from tides caused by planetary gravity (cf. p. 106 and above). The flood lasted 1 year and 10 days (Gen. 7:11 and 8:14). The timing for the exiting from the ark (late July or early August) was ideal for survival of both man and animals. It was ideal because more crops ripen at that time than any other time of

the year (in the northern hemisphere). This provided a needed food supply for both Noah and his family and the animals.

Second, the uniformitarian geologist cannot supply an adequate mechanism whereby these animals could be quick-frozen.

> And it was in the middle of this warming trend in Siberia, when the climate was warmer there than it is now, and right in the middle of the summer, that the mammoth died, and his body was immediately frozen! And somehow or other it remained frozen all through the period of about 30,000 years. (Hapgood, 1970, p. 269)

The intense cold required to *quick-freeze* such a large animal is much colder than that which naturally occurs on the Earth.

Third, the uniformitarian geologist cannot explain how the ice caps could have formed without destroying many tropical life forms.

> The computer modellers, though, may start to take an interest. They have found it hard to get their models to keep the tropical climate warm under ice-age conditions. Some, such as David Rind of the Goddard Institute for Space Science, have taken issue with CLIMAP[121] in public, on the basis that their models simply will not produce such a climate, even when offered copious inducements to do so. (Anonymous #8, The Economist, p. 78)

Large ice caps should send cold air toward the equator destroying many life forms that require temperatures greater than 50° F (10° C) to live.

Fourth, the ecology of the tundra is fragile, and millions of mammoths would do extensive damage to the vegetation. Some of the vegetation requires several years to grow if it is damaged by animals (by being eaten, uprooted, stepped on, etc.). The growing season is so short that plants may develop buds one year, bloom the next year, and develop seeds the next year. This is discussed extensively in an excellent book edited by Chapin *et al.* This book contains extensive documentation

[121] CLIMAP = Climate: Long-range Investigation, Mapping, and Prediction.

of times required for the tundra to recover after the ecology has been damaged.

Fifth, the assertion that the mammoth and woolly rhinoceros were trapped in mud neglects the fact that the permafrost of the tundra only melts for a few inches (1 inch ≈ 2.54 centimeters), on the top of the permafrost, during the summer. How can these animals sink into a few inches of mud?

> Brandt was very much impressed by the fact that remnants of the mammoth, carcasses and skeletons alike, sometimes were found in poses which indicated that the animals had perished standing upright. (Tolmachoff, p. 56)

The fact that these animals are often found in upright positions demands that the AAOEC claim they were trapped in mud or snow because their bodies would have died laying down otherwise.

Sixth, with regard to the location of the mammoth fossils Tolmachoff says:

> Everywhere carcasses of the mammoth and rhinoceros were found, they had been buried within the frozen ground of tundra near its upper surface and usually on comparatively elevated points, on the top of bluffs, etc. This has long been known and, … "more in elevations situated near higher hills than along the low coast, or on the flat tundra." Often mammoth localities are on the highest points of the tundra. (p. 51)

This could be readily explained if the ice came contemporaneously with the advent of rainfall. The rainfall drove some of them to the hills. However, the quick-freezing of the mammoths might not give some of them time to flee to higher ground, unless the rain started and then the ice came a few hours later in many locations. The ice probably did not rain upon all locations at one time. It is the contention of this author that this is probably what occurred because of the fact that skeletons of reptiles and amphibians were found in Northern Russia.

> … on the shore of the river Syeverhaya Dvina, were a number of perfectly preserved skeletons of Permian reptiles and amphibians were found within the bed of an

> ancient river, filled up completely with drift. All the skeletons were found enclosed in peculiar concretions in most cases reproducing fairly well the general shape of an animal. They were oriented at the locality all in the same way, undoubtedly according to the direction of a flow.[122] (Tolmachoff, p. 63)

Seventh, there seems to be evidence that the flood waters from the fountains of the deep (the oceans) did not reach some parts of Siberia, although the rainfall did cause some erosion, probably at the beginning of the flood.

> The strata in which are buried the bones and carcasses of mammoths, rhinoceroses, and other extinct mammals and remnants of plants, are represented by sandy, clayish, or loamy sediments of different thickness. Marine shells or marine mammals have never been discovered in it, and these sediments may be only of fresh water or terrestrial origin.[123] (Tolmachoff, p. 52)

Eighth, whatever caused the extinction of the mammoths also caused the extinction of the woolly rhinoceros, giant beaver, and several other animals. This was a common catastrophe that is easily explained by the events of Genesis 6-9 but cannot be explained by the AAOEC. Even AAOEC agree with this: "all these animals died out more or less simultaneously and probably from the same cause." (Tolmachoff, p. 58) It was not due to starvation or disease because:

> in no case was it possible to discover in the frozen carcasses of the mammoth any bad effects of conditions under which the animal used to live. The animals were always well fed and fat, sometimes too fat. (Tolmachoff, p. 66)

Ninth, it is evident that the Beresovka mammoth did not become stuck in the mud of a river as he crossed it because there was both wood and blood under the carcass.

> He did not fall into water, because, as was ascertained by another investigator, large masses of his blood were found under him. The blood would, of course, have been washed

[122] This is in harmony with the FFM.
[123] No water from "the fountains of the deep" reached this area (MRF).

away had he tumbled into a river. (Hapgood, 1970, p. 270)

Tenth, the deposition of ice caps by snowfall requires large amounts of precipitation. The problem for the AAOEC is that the precipitation requires that the air temperature increase, rather than decrease as it would during an "ice age."

> A widely accepted assumption with which contemporary geologists approach the question of the ice ages is that the latter have occurred as the result of a lowering of the average temperature of the whole surface of the earth at the same time … It is remarkable that this assumption has been maintained over a long period of time despite the fact that it is in sharp conflict with the basic principles of physics in the field of meteorology. The basic conflict was brought to the attention of science at least seventy years ago; it has never been resolved …
>
> Now, meteorologists point out that if precipitation is to be increased, there has to be a greater supply of moisture in the air. The only possible way of increasing the amount of moisture in the air is to raise the temperature of the air. It would seem, therefore, that to get an ice age one would have to raise, rather than lower, the average temperature. This essential fact of physics was pointed out as long ago as 1892 by Sir Robert Ball.[124] (Hapgood, 1970, pp. 49-50)

This reduction in the average temperature on the Earth by icecaps would reduce the amount of evaporation and the amount of snow available for producing the icecaps. Reduced snowfall would then allow the icecaps to melt by solar heating – through evaporation and sublimation. Hollingworth claims:

> As to scale, increasing knowledge of phases of severe permafrost, both within and beyond the glaciated regions, gives indications of extremely cold phases which, in the absence of substantial accumulations of snow and ice, must be considered as dry phases and do not therefore fit in with the concept of increased precipitation as a dominant cause of the onset of glaciation. (p. 7)[125]

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[124] The bias of the AAOEC is evident by their ignoring of this fact.

[125] Antarctica is the largest desert on Earth (MRF). Greenland is also a desert (MRF).

If we **assume** that snowfall created all of the glaciers, we have another problem. Snow is white and this would raise the albedo of the Earth. This would lower the temperature and reduce the evaporation – lowering the amount of water vapor in the atmosphere. This would reduce the amount of snowfall. But the deposition of kilometers-thick glaciers requires an increase in snowfall.

The very thing that caused the desertion of the view that the Genesis flood had caused the formation of most of the geological formations creates a number of problems for the AAOEC view (*Lyellian uniformitarian geology* and *punctuated uniformitarian geology*). Some of these problems seem insurmountable to this author (for the AAOEC model).

Some Flood Advocates Have Problems With the Ice Caps

The advocates of a local flood and some universal flood advocates have difficulty with the ice caps. *First*, the local flood advocate has the same problems as the uniformitarian geologist. *Second*, some universal flood advocates cannot explain: (a) the absence of large amounts of sedimentary rock in some parts of the polar regions (cf. p. 122) and (b) the extreme cold of the ice and sudden nature of the freezing (as evidenced by the plants and animals which were quick-frozen). The presence of the polar ice caps is probably the one phenomenon that has caused the most problems for some universal flood advocates – one exception is Patten who gave a good explanation of the ice-caps.

Phenomena Explained by the Polar Ice Caps

The presence of the polar ice caps helps to explain several phenomena that would result from ice melting: (1) canyons on the continental shelves (*these canyons are at least partially explained by the melting ice* [cf. p. 122]), (2) the evidence that at least parts of the continental shelves were once dry land, and (3) this supplies a mechanism for a land bridge from Asia

to North America, across the Bering Strait (scientists call this land bridge "*Beringia*"). This land bridge would allow animals and man to traverse from Asia to North America after the flood. Archeologist Michael Kunz claims that he has found evidence of this land bridge. He excavated

> what appears to be the oldest well-documented human campsite in Alaska, if not in all of North America. The artifacts from the site seem to confirm a commonly held theory that several different migratory groups crossed the land bridge from Siberia to populate the Americas. (Amato, p. 22)

The colonization of Beringia is discussed extensively by Hoffecker, Powers, and Goebel (pp. 46-53). The dating of the artifacts was by radiometric[126] methods (radiocarbon). Fairbanks (1989) claims the North Atlantic Ocean level was about 130 meters (426.5 feet) lower during the ice age than it is at present (cf. p. 639). He dates this event by radiocarbon dating. Radiocarbon dating will be discussed extensively in Chapter 13 (cf. pp. 259 through 283).

> The Caribbean reef-crest coral *Acropora palmata* (Lamarck) is the best available sea level indicator for Pleistocene studies. This species is generally restricted to the upper five metres of water and dominates the reef-crest community in many locations … Extrapolation of the sea level curve to 18,000 years BP[127] indicates a sea level of 121 ± 5 m[128] below the present level during the last glacial maximum, the best estimate so far. (Fairbanks, 1989, pp. 637 and 639)

It is the contention of this author that Gen. 10:25 probably refers to the covering of this land bridge by the melting ice caps.

> At its height 20,000 years ago, ice sheets a mile thick covered much of northern Europe and North America. Glaciers expanded in high plateaus and mountains throughout the world. Enough ice was locked up on land to cause sea levels to drop more than 100 meters (*328 feet* –

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[126] Also called isotopic dating.
[127] BP = before present (before 1950).
[128] 397 feet ± 16.4 feet (MRF).

MRF) below where they are today. (Allegre, et al., p. 74) Strickling takes the view that the division of Gen. 10:25 was the formation of the Great Rift Valley (pp. 159-160). This author contends that the Great Rift Valley, which runs through the Dead Sea, was formed in Genesis 19. The ruins of Sodom and Gomorrah were, no doubt, covered by the waters of the Dead Sea as the Jordan river flowed into this area after it was sunken by the formation of the rift. There is no doubt that the Jordan River once flowed into the Gulf of Aqaba, but that the depression that has formed the Dead Sea provides enough area that the water evaporates before it can fill this depression and continue the flow into the Gulf of Aqaba.

The word translated "Peleg" (פלג – Gen. 10:25) is the same as the word "stream or river" (Isa. 30:25; 32:2, etc.). This word means: "(cleft) **channel**, (artificial) canal … (i.e. irrigating canals from river." (Brown, *et al.*, p. 811) This division was by means of a stream or river which would easily fit water flowing out of the Arctic Ocean into the Pacific Ocean.

Another land bridge was possible from Indonesia to Australia if the waters were 100 meters (*328 feet – MRF*) below where they are today. Hughes claims the drop of the level of the oceans was about 500 feet (*152 meters*). "The last ice age peaked just 18,000 years ago, … One-third of the planet's land area was entombed in ice, causing sea level to drop some 500 feet." (Hughes, p. 11) There is a deep area that is quite narrow between Australia and Indonesia,[129] but this might have been separated by a postdiluvian rift that formed when the crust was being split by the internal forces caused by the mechanism that caused the flood and/or mechanisms set into motion by the flood.

> During ice ages, when sea level is low, Australia, Tasmania, New Guinea, and their smaller neighbors coalesce into a single great island. Dubbed Meganesia by scientists. (Flannery, p. 41)

If one-third of the planet were entombed in ice, it would have cooled the tropics to such an extent that most tropical plants

[129] These imaginary lines dividing Indonesia and Australia are called *The Wallace Line*, *The Weber Line*, and *The Lydekker Line*.

and animals would have become extinct. Broecker (pp. 1902-1904) and Kerr (1996, pp. 1584-1585) claim the temperature changes were even more drastic than scientists formerly thought.

Past Changes in the Earth's Climate

The melting of these ice caps would help explain the change in the climate of the Earth after the flood. Job[130] speaks of several animals existing in Arabia during his lifetime that certainly are not living there now. Job speaks of ostriches (Job 39:13-18) and behemoth (which could be dinosaurs [Job 40:15-24]). He further speaks of leviathan that is some water-dwelling animal such as a crocodile or possibly dinosaurs (Job 41:1-34). It is evident that the climate of Palestine has changed from that of 1450 BC because at that time it was a land flowing with milk and honey (Num. 13:23-27). The Sahara Desert is growing, at this time, as it has been for hundreds of years. The climate changes could be readily explained by the melting of the polar ice caps. This would: (1) raise the temperature of the Earth including the ocean, (2) raise the levels of the oceans, and (3) change the rainfall patterns because of the changes of the ocean levels and temperatures. If the Bering Strait were a land bridge, the temperature of the Pacific Ocean would be greatly changed when this bridge allowed water to flow from the Arctic Ocean into the Pacific Ocean. In addition, ocean current patterns would be drastically changed as other land bridges were breached by the rising waters of the oceans. This would cause changes in the climate of many regions (warming some, cooling some, and changing the rainfall patterns). It is noted that pollution of the atmosphere by mankind could have contributed to the changes in climate, but there is no evidence that mankind polluted the atmosphere in ancient times in the manner he is doing in modern times.

In the period of about 900 BC to 100 BC the climate of southern Europe and Northern Africa changed.

[130] Job probably lived about 2,200 BC.

> Although the period between 900 and 300 BC or somewhat later was a cold epoch, the most striking feature from the European record is the associated increase in wetness, … Further south, in the Mediterranean region and in North Africa, the climate during the Iron Age cold epoch seems to have become drier, but not so dry as it is today. Roman records are of value here; agricultural writers, such as Saserna, noted around 100 BC that the vine and olive were spreading north in Italy to regions where the weather had previously been too severe, suggesting that the centuries before 10 BC had indeed been cooler in the Mediterranean. (Gribbin and Lamb, p. 70)

This is in total accord with the record of the Old Testament. In the period between about 1200 AD and 1850 AD Europe experienced a "little ice age." The streams in the Netherlands were covered with ice and people skated on them which is not done in the winters at this time. This period was probably brought about by two or three factors: (1) large icebergs broke loose from Greenland and North America and floated south into the North Atlantic Ocean and cooled the ocean water and (2) the flow of water from the Gulf Stream was probably blocked by these icebergs and Europe cooled off substantially. Another possibility is that the flow of water from continental ice sheets melting was diverted toward the North Atlantic Ocean and affected the climate. Both factors "1" and "2" probably caused the "little ice age." Possibly other factors also affected the climate and contributed to the "little ice age." No doubt, it was a combination of factors that caused these climate changes.

The period known as the "Younger Dryas" period (supposedly occurring about 10,000 years ago) could be explained by the same two factors that explain the "little ice age." One additional factor could be that the water from melting ice ceased to flow into the Mississippi River and began to flow into the Great Lakes system (out the St. Lawrence River). This water flowed between Cape Breton Island and Newfoundland down the Laurentian Cone (just southwest of the Grand Banks). The cold fresh water was less dense than the warmer salt water and the colder water was on the surface of the North

Atlantic Ocean. This cold water caused cold winds to move across the continents (Europe and North America). Before the level of the oceans was raised by the melting ice, larger portions of the continental shelves were dry land, which would change the patterns of ocean currents (the Gulf Stream would flow south of where it presently flows) which would change the climate. The St. Lawrence River did not flow until the ice retreated sufficiently (possibly at this time).

What Caused These Changes in the Postdiluvian Climate?

It is evident that the changes in the climate of the Earth are probably the result of a combination of factors. Obviously, icebergs would be broken off the ice caps (calving occurs) of Greenland after the formation of the caps. These icebergs would drift into the North Atlantic Ocean and cool the climate of Europe and other parts of the Earth. Icebergs would also break off the Antarctic ice cap and drift north into the South Atlantic, South Pacific, and Indian Oceans.

> After a quarter-century with the British Antarctic Survey, Mike Thomson is not easily impressed by icebergs. But the one that showed up in satellite photos earlier this year was the biggest he'd seen in years. Floating slowly out to sea off the Antarctic Peninsula, the frozen slab was about 600 ft. (*183 meters – MRF*) thick, 23 miles (*37 kilometers – MRF*) wide and 48 miles (*77.2 kilometers – MRF*) long. It was a megaberg roughly the size of Luxembourg … No one can say precisely what will happen to the ice, and a similar event in 1986 doesn't offer much of a precedent. At that time three megabergs broke loose into Antarctic waters, each bigger than this year's. Two grounded themselves in shallow waters, and are still there. The third went north, with some of it actually reaching the Tropics before melting. (Lemonick, p. 65)

These icebergs would probably be larger, and perhaps more numerous, than the one mentioned by Lemonick (above). This would have a cooling effect on the parts of the Earth where ocean currents flowed.

As the levels of the oceans were raised, by the melting ice, the oceanic currents would flow in different patterns. The currents would flow over the continental shelves and change the climate patterns. A deflection of The Gulf Stream ocean current would greatly affect the climate of Europe and the eastern shoreline of North America. A similar deflection of the Japanese current in the Pacific Ocean would affect the eastern shoreline of Asia and the Western shoreline of North America.

There is a natural blockage of the flow of water from the Arctic Ocean into the North Atlantic Ocean. The flow of cold water out of the Arctic Ocean probably first began east of the Faeroe Islands (*between Iceland and England*). This water would cool the Atlantic Ocean as the cold water moved under the warm gulf stream. Water probably exited the Arctic Ocean through the Nansen fracture zone (between Spitsbergen and Greenland). This fracture zone might have been caused after the flood as the Earth fractured to release the pressures created by the twisting of the Earth on its axis during the flood. This possibly occurred at the same time that Sodom and Gomorrah were destroyed or at some similar occurrence. In addition, this would allow a longer time span for the ice to cool the oceans and not cause a sudden change in climate. This may explain why the ice age did not kill the tropical plants and animals – God providentially preserved the tropical plants and animals.

The loss of the water vapor canopy and all the factors associated with it would affect the climate of the Earth. Less carbon in the atmosphere would reduce the vigor of plant life and raise the albedo (reflectivity) of the Earth while at the same time lowering the greenhouse effect (from carbon dioxide CO_2). Volcanic activity would increase the atmospheric carbon dioxide level while volcanic dust would reflect light from the Sun (raise the albedo). These factors are extremely complicated to analyze because it is neither known how much volcanic dust entered the stratosphere nor how much CO_2 entered the atmosphere during this time.

Alternative Explanations for the Polar Ice Caps Considered

Some Bible believers have claimed that several hundred years of snowfall produced the ice caps. These ice caps existed at depths of at least 15,000 feet (4,572 meters). Snow produces water at the rate of about 11 to 1 (i.e. 11 inches [28 centimeters] of snow produces 1 inch [2.54 centimeters] of water). Some snow is drier than other snow and requires about a 12 to 1 ratio. If this is projected with a 10 to 1 ratio (the best-case scenario for the falling snow to produce the ice caps) it would require 30 feet (9.1 meters) of water (300 feet of snow or 91.4 meters) average for 500 years to produce ice caps of 15,000 feet (4,572 meters) depth. Some ice caps are still almost that deep. If the ice caps were 20,000 feet (6,096 meters) thick, it would require 40 feet (12.2 meters) of water (400 feet or 122 meters of snow) average for 500 years to produce the ice caps. The Antarctic ice caps contain "7,000,000 cubic miles of ice that cover Antarctica to a maximum depth of nearly three miles." (Tyree, p. 282) These amounts of precipitation are staggering, particularly in light of the fact that cold climates tend to reduce the amount of moisture in the air (cf. my notes on pp. 129-130).[131]

> Accumulation in Antarctica is controlled principally by air temperature (moisture transport is limited by the saturation vapour pressure of the cold air) and, particularly in the coastal zone, by the frequency of precipitation events, which depends on the intensity of cyclonic activity. (Morgan, *et al.*, p. 59)

Tyree states:

> Paradoxically, Antarctica is almost everywhere a waterless land. Annual precipitation on the vast interior plateau is equivalent to four inches of rain, only two inches more than that of Death Valley. (p. 273)

Extremely cold air is unable to transport appreciable amounts of water vapor. Air with a temperature of -20° C will be saturated when it has about .8 grams of water vapor per cubic meter (gm/m^3) in it. Air with a temperature of 20° C (room temperature) will be saturated when it has about 18 grams of

[131] Cold air has a greatly reduced ability to retain water vapor.

water vapor per cubic meter (gm/m^3) in it (cf. Hodgman *et al.*, p. 2486). Not only would it become more difficult to transport the water vapor by the colder air, but colder climates reduce the amount of evaporation from the oceans and thereby the amount of water vapor available for snow (cf. the prior quote of Hapgood, 1970, pp. 49-50 [cf. pp. 129-130]).

Another problem with this view is that snow tends to evaporate even when the temperature is below freezing. This is a process called "sublimation" which is the same process one observes when "freezer burn" occurs in meat left in a freezer. This process can be observed with "dry ice" (frozen carbon dioxide). Dry ice will go directly from a solid state to a vapor without going through the liquid state. This sublimation necessitates an even greater amount of snowfall to create the ice caps.

Some AAOEC have asserted that the polar ice caps were brought about by a reduction in the energy output of the Sun. The evidence from the lunar core samples brought back by the Apollo 12 astronauts proves that this theory is false.

> There is no evidence in the lunar samples of any changes in the intensity and frequency of solar flares, the solar wind, or the galactic cosmic radiation as far back as we can look into the history of the Moon. The solar wind has not changed for 4.5 billion years. Thus the lunar studies may indicate that the Earth's ice ages were not triggered by changes on the Sun as had been speculated. (Burgess, p. 119)

Of course, this author disagrees with the claim that the Moon has existed for 4.5 billion years. Burgess does not give any evidence for the Moon being 4.5 billion years old; he merely asserts it. The age of the Earth will be considered in Chapter 14 (p. 226). If the intensity of the Sun's rays increased to make the polar regions temperate, the equatorial regions would have experienced excessive heat. This heat would have destroyed life in the regions near the equator.

Another theory of how the ice caps were created is related

> … to the loss of carbon by the burial of sediments. The

> removal of atmospheric CO_2 by the massive burial of sedimentary organic matter during the Carboniferous and Permian periods, evidenced by the abundance of coal of this age, amplified the large mid-Paleozoic drop in CO_2 concentration. The consequently lowered greenhouse effect from this drop likely had a major influence in bringing about the Permo-Carboniferous glaciation, the most extensive and longest glaciation of the entire Phanerozoic. These results further support the idea that the atmospheric greenhouse effect has been a major factor affecting global climate change over the geologic time. (Berner, 1993, p. 70)

This carbon was deposited during the flood and was lost to the environment at that time. This theory demands that the energy output of the Sun be less than it is at the present time. Berner developed a mathematical formula (empirically derived [cf. p. 32]) which has the Sun increasing in intensity from the past. "Estimates of changes in the solar constant with time show that it essentially increased linearly over the past 570 million years by 4.6%." (1993, p. 69) He gave no evidence for this increase in energy output of the Sun – he estimated it. His interpretation of the data demands that the Sun increase in energy output. This theory does not explain why there allegedly were several ice ages; therefore, the advocates of this theory should claim there was only one ice age.

Another theory of the formation of the ice caps is called the "conveyor belt" theory.

> In today's circulation, surface currents carry heat and salt into the far North Atlantic as part of a globe-girdling "conveyor belt" of currents. A key turning point in the conveyor is the sinking of the salty-hence dense-waters of the North Atlantic to form a cold, deep current that flows back to the south. Wallace Broeckert of Lamont has proposed that changes in the saltiness of the North Atlantic, by turning the sinking on and off, could act as an ice-age climate switch with a built-in clock-just the thing to drive a long series of climate oscillations. (Kerr, 1993a, p. 891)

This theory is at least partially answered by Lawrence Edwards *et al.*

> The Barbados chronology does not support this idea because it implies that the PRM[132] started before and continued throughout the YD.[133] A low melt rate that began before the YD would not have allowed formation of the low salinity cap required by the meltwater-diversion hypothesis. (p. 965)

Another answer to this theory is given by Fairbanks:

> From measurements of annual ice-layer thickness over the past 15,000 years, the authors find that Greenland's climate, emerging from the last ice age twice shifted from glacial to inter-glacial conditions over an astonishingly quick 3-5 years … that will require identifying a mechanism for a 7 °C climate warming that reached from North America, across Greenland, the North Atlantic and into central Europe. Analogies to the North Atlantic Oscillation, the much cited ocean-circulation link to climate, cannot apply over such distances. The prevailing theory that these climate shifts were triggered by the switching on of "theromhaline" density-driven vertical circulation is very appealing; however, its advocates have a difficult, but not impossible, task of explaining mode changes that last only three years. Although areas of deep-water convection are very localized, significant heat release from the ocean to the atmosphere, the control mechanism, requires large areas of ice-free water … Most difficult to explain is how the heat release from the theromhaline circulation (down wind of North America) contributed to the North American ice-sheet collapse. (1993, p. 495)

Many AAOEC claim there were a number of ice ages. These ice ages were supposed to have occurred in cycles over several million years of time. The evidence for successive ice ages is not convincing. Some scientists assert that there was only one ice age. Gignoux states:

> So some German geologists, knowing their country very well (for example, Geinitz) have held the opinion that the withdrawals separating two successive stages were very unimportant and there was no proof of the existence of

[132] PRM = period of reduced melting.
[133] YD = younger dryas (a period of an ice age in uniformitarian geology).

> several glacial periods. These monoglacialists believed the glacier had one maximum and was stationary with small oscillations in detail, then began to retreat spasmodically and the climate did not become similar to the present until after this retreat, in post-glacial times.
>
> This opinion can be refuted only by referring to the evidence of deep wells sunk in the region of Berlin. (pp. 626-627)

Birkeland and Larson state:

> A single catastrophic deep freeze of the earth would not fit very well with our ideas of uniformitarianism. When we look back through the geological record, indeed, we do find evidence for other periods of extensive glaciation preceding the last one. The evidence consists largely of deposits known as **tillites,** which are nothing more than consolidated glacial till. These unsorted deposits are considered of glacial origin only when they rest on striated and polished rock surfaces, and the bounders[134] they contain show striations.[135] (p. 459)

These layers of glacial deposits of rocks could have been deposited by a combination of the flood waters and the ice raining down through the windows of heaven. No doubt, chunks of ice would fragment the rocks when they hit them and would deposit debris on the ice and in the ice. It is also possible that the glaciers oscillated back and forth across the land masses as there were changes in isostasy – both during and after the flood (cf. pp. 175-176).

There is no doubt that snowfall does contribute to the depth of the glaciers in some instances. Mountain glaciers were possibly deposited during or immediately after the flood and have been sustained by the snowfall that has occurred since the flood. The supply of ice by snowfall for relatively small mountain glaciers does not provide a mechanism for continental glacier deposition because the atmosphere would

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[134] This is a possible typo error (the word might be *boulders*).

[135] A minute groove, scratch, or channel especially when one of a parallel series.

lose its water vapor as it passed over the edges of the glaciers. This mechanism would only explain the deposition of the edges of the glaciers (ice caps), not the interior of the ice caps.

Several theories of the formation of the ice caps are based upon factors that take long periods of time to occur (thousands or tens of thousands of years). Hollingworth answers these claims by pointing out that many fluctuations have occurred in the climate of the Earth. He states:

> I can refer only briefly to the cause of such fluctuations. The consensus of evidence is increasingly in favour of their world-wide distribution. It seems, therefore, that knowledge of the increasing complexity of the climatic record must go far to eliminate many of the various suggested terrestrial causes, such as variations in the amount of carbon dioxide or of volcanic dust in the atmosphere. There are doubts as to the adequacy of the various astronomical hypotheses of Croll and Milankovitch, which invoke variations in the earth's orbit to explain changes of the required magnitude. Cosmic theories such as those of Hoyle and of Lyttleton are also unlikely to be able to account for such short-term variations. Continental elevation, polar or continental wandering, and major changes in the distribution of land and sea would all appear to be long-term changes that would be unlikely individually to produce fluctuations of the type indicated by the evidence. (p. 8)

Whatever explanation is given for the ice caps must explain at least three phenomena. The *first* thing it must explain is the presence of ice caps in both the Arctic and Antarctic regions at the same times. The *second* thing it must explain is the fact that tropical plants and animals survived this supposedly long period of time called the "ice age(s)." The *third* thing it must explain is the non-periodic nature of the ice ages (*dated by uniformitarian assumptions*). Other things that have been pointed out by AAOEC scientists must be explained. Because there are several theories about how ice caps were formed, the scientists with competing theories frequently provide arguments against each theory.

Dating of the Ice Caps

The AAOEC dates the ice caps by at least three methods. *First*, the depth of the ice is measured, and the present rate of snowfall is determined, and this is projected backwards in time (extrapolated – linear extrapolation) and the time it allegedly took to deposit the ice cap is calculated. This is based upon uniformitarian geologic assumptions (one layer of ice each year – as with tree rings). *Second*, radiometric dating (radiocarbon) is used to date such things as the trees under the ice caps (radiometric dating techniques will be discussed in detail in Chapter 13 [cf. pp. 259 through 283]). *Third*, both dust particles and chemicals (usually acid) are found in the ice and linked to volcanic eruptions or other events and dated by these events. But these events are frequently dated by either uniformitarian geologic assumptions and/or radiometric methods. These dust and chemical layers are far from conclusive. The "Camp Century" and "Dye 3" ice cores in Greenland had conflicting results for the dust and acid in the cores.

> The core at Camp Century produced an acid peak at 1390 ± 50, but its authors claim there is no corresponding acid peak in the Dye 3 core. Furthermore, Dye 3 produced a peak at 1644 where the Camp Century core is silent … The eruption of Katmai in the Aleutian Islands in AD 1912 is barely detectable in the Dye 3 core, but shows well in Camp Century … the authors of the ice core data admit that their cores can fail to record significant volcanic eruptions. Dye 3 is admitted to barely record Katmai in AD 1912. (Newgrosh, 1988, p. 66)

Acid markers are used to correlate the ice cores with "known events" from the past (particularly volcanic eruptions). Pyle states:

> The recent correlation of a sulphuric acid peak in a Greenland ice core with an eruption of Santorini was based on the apparent close convergence of the calibrated radiocarbon date span for the Minoan eruption. (p. 89)

Radiometric dating is the standard for dating the ice rings.

The correlation of the ice cores with volcanic eruptions is "highly tentative." (Pyle, p. 89) Pyle also states:

> Further illustrations of the imperfections of the ice-core record are provided by three recently identified Aleutian centres. These erupted three to five centuries before Thera, were each as large as the Thera eruption … and would have been at least as likely to leave acidity markers; none have been recognized. (p. 89)

Hughes makes an interesting observation regarding both ice cores and sediment cores.

> This and earlier ice cores have badly shaken the long-held belief that interglacials and ice ages are relatively stable events measured in thousands and tens of thousands of years, respectively. This comforting concept was reinforced by ocean-sediment cores, which have a maximum resolution of perhaps 1,000 years. The latest Greenland ice core, by contrast, has a resolution of decades or less. (p. 17)

With regard to the dating of deep-sea-sediments Blanchon and Shaw state:

> Furthermore, deposit-feeding strategies of deep-sea benthos[136] mean that sediment fabrics are severely disturbed in deep-sea settings … the notion that localized burrows displaced foraminifera[137] to deeper levels is therefore an oversimplification of the problem. In short, bioturbation spells trouble for dating rapid environmental shifts in deep-sea-sediment records … and, as such, even the best-dated records cannot resolve events with a time span of <300-500 yrs. (p. 958)

Merriam-Webster defines the word *resolve* as: "to distinguish between or make independently visible adjacent parts of." (p. 997) Hughes (p. 17) is saying that the one looking at ice rings cannot tell whether he has 1 ring or 10 rings ("a resolution of decades or less" i.e. 1 year or 10 years), and the one looking at sediment cores cannot tell whether he has 1 layer or 1,000

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[136] Benthos are organisms that live on or in the bottom of a body of water.

[137] Foraminifera are organisms that are large chiefly marine rhizopod protozoans usually having calcareous shells that often are perforated with minute holes for protrusion of slender pseudopodia and form the bulk of chalk and nummulitic limestone.

layers (1 year or 1,000 years). When they claim an ice core can be dated at 10,000 years, they cannot be sure it is not "really" 1,000 years old! Measuring time by ice rings with "a resolution of decades or less" is like measuring the wear on a crankshaft with a yardstick (meter stick) or like having a pharmacist to measure the dosage of a drug with a set of bathroom scales! How can they claim to have dated anything by this system with this kind of resolution? Did they date the ice rings by radiometric methods instead of "counting rings or counting layers of ice?"

With regard to dating of the "ice ages" Mather states:

> Extensive glaciation, like that of Pleistocene time, has occurred at widely separated intervals during the long history of the earth. The record of those ancient refrigerations consists of masses of *tillite* (consolidated till) in the midst of the sedimentary or metamorphic rocks. Tillite is distinguished from other conglomerates by its matrix of clay or silt and its glacially striated cobblestones and boulders. In some places it rests on a glaciated rock floor or pavement; sometimes it is associated with fine-grained sedimentary rocks having varve-like laminations. The age of a tillite is indicated by its relations to other rocks whose age has been determined either by their fossils,[138] by the radioactive timekeepers,[139] or by correlation with still other rocks whose age is known.[140] (pp. 180-182)

Other Biblical References to Ice and Snow

The Scriptures do not use the words: **ice**, **cold**, **frozen**, or **snow** until Gen. 8:22 and thereafter. Job, who was a postdiluvian patriarch, spoke of ice and snow in Arabia (Job 6:16, 9:30, 24:19, 37:6-10; and 38:22). Job also set forth that the ice came forth in both a sudden nature and perhaps in a small locality in Job 38:29 by the figure of a birth. In Job 38:30 he speaks of the ocean (deep) being frozen. And in Job 38:31

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[138] Index fossils.

[139] Radiometric dating.

[140] The age is probably "known" by either index fossils (*assumed from the theory of macroevolution*) and/or by radiometric dating.

God speaks of a planet with rings (bands). God also speaks of comets in Job 38:32 by the word *mazzaroth*.[141] It is believed that the rings (bands) of planets, such as Orion, are largely composed of ice particles as are comets. These ice particles would be extremely cold.[142] It is probably significant that these planetary phenomena are associated with the flood (cf. p. 104).

THE PROBABLE SOURCE OF THE ICE CAPS

In order to determine the probable source of the polar ice caps it is necessary to conform: (1) the facts of nature, (2) the laws of nature that were given by God, (3) the entirety of the Scriptures (cf. Chapter 3), (cf. p. 28), and (4) the points developed in all the prior Chapters. All four of these will be brought to bear upon this important topic.

Universal Destruction by Water

In Chapter 4 (cf. p. 38) it was demonstrated that the destruction by the events of Genesis 6-9 was universal. The absence of large deposits of marine sedimentary rocks in some of the polar regions (cf. this author's quote of Tolmachoff on pp. 127-128) proves the flood waters either did not cover the polar regions or only covered this region for a short period of the flood; therefore, something else must have caused the destruction in these regions. Since the antediluvian world perished by water (2 Pet. 3:5-6) and ice is merely frozen water, it would be proper to say that water was involved if both water and ice were used to destroy living creatures.

A number of both plants and animals were entrapped by the ice during the flood. On Axel Heiberg Island "the forests are mummified; the wood is dry and somewhat compressed, but otherwise unchanged … with many trees reaching more than a hundred feet in height." (Francis, p. 57) These mummified trees were probably mummified by the extremely cold ice and were compressed by the weight of the ice that was deposited upon them. Extreme cold tends to mummify organisms by

[141] Mazzaroth is a star with a beard – obviously it was a comet.
[142] Temperatures of ice in space are extremely cold.

preventing decomposition by bacteria and "freeze-drying" them, by sublimation.

The Windows of the Heavens

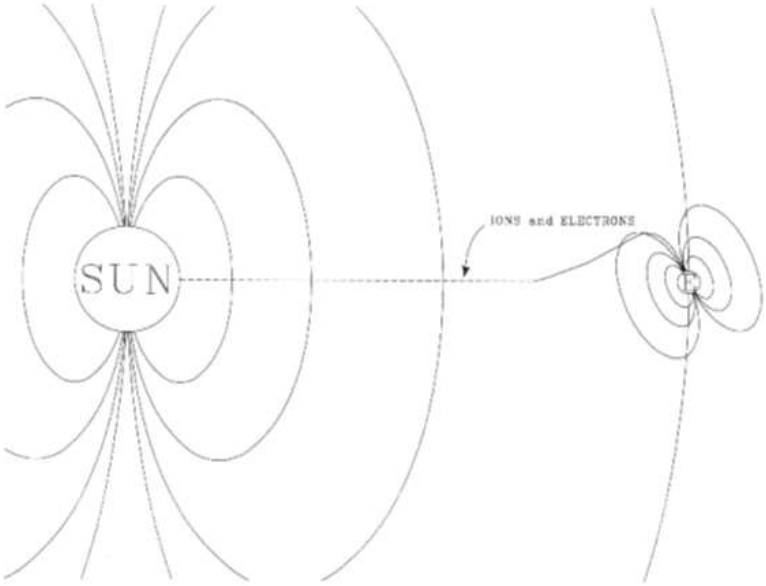
The phenomenon known as the windows of the heavens (Gen. 7:11, 12, and 8:2) is set forth as one of the factors which caused the destruction. Most Christians have thought that the windows of heaven were the same as the rainfall. Moses records three phenomena in Gen. 7:11-12 and 8:2: (1) the fountains of the deep, (2) the windows of heaven, and (3) the rain. Certainly, the word "windows" (ארבה – pronounced *ărubbâh* – Strong's #H699) is figurative (perhaps a metaphor). This word is translated "chimney" in Hos. 13:3. This metaphor and the other figurative expressions in the context express the idea of an opening or region into which or through which something falls.

The polar ice caps of the Earth are some distance from the geographic poles of the Earth. They are symmetrical about the magnetic poles of the Earth. Since the magnetic poles of the Earth are some distance from the geographic poles of the Earth, this symmetry about the magnetic poles is probably significant. This may be related to the northern lights *aurora borealis* and southern lights *aurora australis*. These phenomena are related to the magnetic field of the Earth and are symmetrical about the magnetic poles. These aurorae are caused by charged particles which are entering the atmosphere in the regions of the magnetic poles. It is a principle of physics that a moving charge will have its path changed when it encounters a magnetic field. The charged particle will travel in a path that is parallel to the magnetic field. This is the same principle by which the electron beam in an old TV picture tube (CRT)[143] is swept across the screen. The strength of the Earth's magnetic field must have been stronger at the time of the flood since it is diminishing (McDonald and Gunst). The following diagram illustrates the principle that produces both the northern lights and southern

[143] Cathode ray tube.

lights (Figure 4):

Figure 4



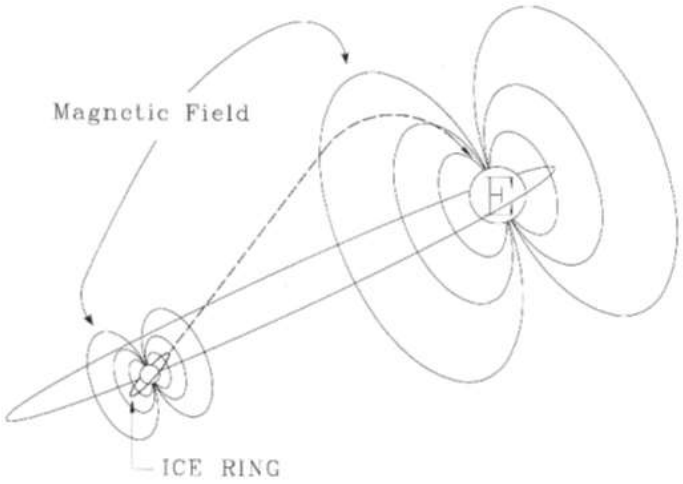
The H_2O ice particles are diamagnetic (cf. Wolfson and Pasachoff, p. 772) which helps to explain why the ice was deposited in the polar regions. A stronger magnetic field would give even more reason for the ice (which is diamagnetic) to be deposited near the magnetic poles.

> Even materials with no intrinsic magnetic moments can have magnetic moments induced when a magnet approaches or when an applied magnetic field otherwise changes. Such materials are termed **diamagnetic.** In contrast to paramagnetic and ferromagnetic materials, diamagnetic materials are repelled by magnets. (Wolfson and Pasachoff, p. 771)

The diamagnetic property of water would cause the ice to be deflected toward the magnetic poles as they were accelerating toward the Earth and into the Earth's intense magnetic field. This might help to explain the figures of ice coming from a womb in Job 38:29 and the windows of heaven. The regions where the magnetic fields enter the Earth would serve as windows through which ice could enter the atmosphere.

Since the planet which probably caused the breaking up of the fountains of the deep also had ice rings (cf. Chapter 8] and this Chapter), the deposition of the polar ice caps symmetrically about the magnetic poles of the Earth is easily explained. The following diagram (Figure 5) explains the simultaneous deposition of ice and tidal activity:

Figure 5



Uniformitarian geology would demand that the ice should exist as scattered icebergs in the Arctic Ocean. If the basic thesis (hypothesis) of this treatise is correct, the ice should be in one continuous sheet rather than in isolated glaciers.

> Glaciologists have long debated what sort of ice covered the Arctic Ocean during the last Ice Age, … Most have agreed it was thin sea ice and scattered icebergs, just as it is today … Now researchers have found signs that huge icebergs with record-deep keels once drifted out of the Arctic – signs that there may have been an Arctic ice sheet after all. (Holden, p. 735)

This conclusion was derived from two different pieces of evidence. *First*, deep grooves were carved by the keels of huge icebergs (300-700 meters ≈ 984-2,300 feet deep). *Second*, a

submerged ridge next to the scrape marks was beveled smooth (cf. Holden, p. 735). Holden says these icebergs were twice the thickness of present icebergs in Antarctica. The "thin sea ice" demanded by uniformitarian assumptions has been disproven.

> Scientists doubted that the ice extended off the continents and out over the Arctic Ocean. They suspected that the Arctic Ocean, though surrounded by vast plateaus of ice, was not itself very different from the way it is today.
>
> Now research from the Arctic floor suggests a mass of thick floating ice *did* bridge the continents … Circumstantial evidence supports the theory that it was a single ice sheet rather than icebergs. The scratches are parallel, for example, while most iceberg scratches are randomly oriented, reflecting the wanderings of drifting bergs … Another clue that thick ice covered the Arctic Ocean during the ice ages comes from sediments drilled from the seafloor. (Allen and Waters, p. 12)

A continuous ice cap could be easily explained by cosmic ice, but not by terrestrial ice (snowfall).[144] The reader should remember that saltwater has a much lower freezing point than fresh water[145] and the saltwater ice of the Arctic Ocean tends to thaw in the summer. This breaks the ice caps into individual caps on the islands which would expand outward as the salt water froze and melted during the summers.

The planet probably first approached the Earth above the ecliptic plane and deposited ice in the northern hemisphere first, then after it revolved around the Earth, it deposited ice on the continent of Antarctica. This means that Antarctica was first flooded with water, then the ice caps were deposited, but portions of Siberia, Canada, and Greenland were never flooded with water, but were first covered with ice.

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[144] This also refutes the idea, of some creationists, that several hundred years of snowfall in the postdiluvian Earth created the ice caps.

[145] This is why salt is spread on roads and sidewalks to melt the ice. In addition, this is why rock salt is poured on the ice on an ice cream freezer (it lowers the temperature of the freezing point of the water).

The symmetry of the ice caps about the magnetic poles of the Earth rather than about the geographic poles of the Earth cannot be explained by either *uniformitarian* or *punctuated uniformitarian* assumptions. The flood model advocated by this author (FFM) can easily explain this symmetry.

SOME PHENOMENA EXPLAINED BY COSMIC ICE

It is claimed that the flood waters would melt the ice and not allow the ice caps to remain. This would be true for ice of higher temperatures and for ice on the edges of the ice caps. The edges would melt, but low temperature ice (≈ -459° F or ≈ -273° C) would not have melted as quickly. If the ice were near absolute zero (-459° F or -273° C), it could cause the rocks to fragment when they were wet from the tides and the ice hit the rocks. This would create fractured rocks at the boundaries between the ice and the water. As the ice advanced from more ice coming through the "windows of the heavens," it would have distinct layers of fragmented rocks with sand upon the rocks. These boundaries would change as the ice advanced. This is a plausible explanation of the geologic features called kames.[146] As the ice melted and flowed in streams (above and below the ice) it would form eskers.[147]

The cosmic ice entering the atmosphere would cause condensation of the water vapor canopy (Chapter 6). This provided one mechanism to cause the forty days of rainfall with another possible mechanism to be introduced in Chapter 10). In addition, this provides one mechanism that would prevent the formation of another water vapor canopy like the antediluvian canopy. Other mechanisms are discussed in other parts of this book (cf. pp. 76-80).

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[146] Kames are conical mounds of partially stratified drift which are said to have been deposited in and along the edges of the ice by temporary glacial streams.

[147] Eskers are long winding mounds of glacial drift which are said to have been deposited by sub-glacial streams when their velocity decreased.

Heat Produced by Condensation of Water Vapor

When water changes state from a vapor to a liquid there is a release of energy. Water vapor releases energy at the following rates when it changes to liquid water: 540 kcalories/kilogram (540 kc/kg), 2,260 kilojoules/kilogram (2,260 kJ/kg), and 970 British thermal units/pound (970 Btu/lb.). With 33.90 feet (10.33 meters) of water falling upon every square inch of the surface of the Earth there would be 14,259 Btu/in^2 of energy released by the water vapor changing to liquid water! (33.90 feet [10.33 meters] of water falling would reduce the atmospheric pressure by 50% [From 2 atmospheres {29.4 lbs/in^2 ≈ 2.026 × 10^5 Pa} to 1 atmosphere {14.7 lbs/in^2 ≈ 1.013 × 10^5 Pa}].)

> The quantity of heat transferred in a process is measured by some change which accompanies the process, and a unit of heat is defined as the heat necessary to produce some standard, agreed-on change. Three such units are in common use, the calorie (cal), the kilogram-calorie (kcal), and the British thermal unit (Btu).
>
> One calorie is the quantity of heat which must be supplied to one gram of water to raise its temperature through one Celsius degree.
>
> One kilogram-calorie is the quantity of heat which must be supplied to one kilogram of water to raise its temperature through one Celsius degree.
>
> One Btu is the quantity of heat which must be supplied to one pound of water to raise its temperature through one Fahrenheit degree. (Sears & Zemansky, 1960)

The heat released by the water vapor changing state to liquid water causes a problem for those who agree that there were 40 days of rainfall and reject this author's claim that the ice caps are cosmic ice. Morton mentions this as a problem for the view that the rain lasted forty days. Morton points out that the condensation of water vapor to form rain produces heat (cf. the previous paragraph). According to Morton, this heat would

be excessive and would have destroyed life in the ark (Morton, pp. 41-42).

This problem is solved with the position that there was cosmic ice entering the polar regions simultaneously with the rainfall. This would lower the temperature and offset any heating effect from the condensation. From the fundamental heat equation $H = wc\Delta t$ (English units) or $H = mc\Delta t$ (SI units) it is determined that cosmic ice (temperature ≈ -273 °C or -459 °F) would require 246 Btu/lb., 136.5 kcal/kg, or 571.3 kJ/kg to raise the ice temperature to 32° F (0° C). Since the latent heat of fusion (L_f) of water is 144 Btu/lb. (Which is 335 kJ/kg = 80 kcal/kg), it would require this additional amount of energy to melt the ice. The only alternative to cosmic ice is to say that God worked a miracle to keep the temperature low enough to preserve Noah, his family, and the animals on the ark.

The present average albedo of the Earth is 0.31 (meaning that 31% of the energy from the Sun is reflected back into space).[148] The average albedo of clouds is about 0.78. The clouds that formed during the 40 days of rainfall most certainly reflected back extensive amounts of energy from the sunlight falling upon the Earth. In addition, the increase in the albedo from the ice (albedo of almost 1) would absorb much of the heat from the condensing water vapor.

In addition, this heat could be the explanation of the claims of fluctuations of air temperatures during the "ice ages."

> The excitement began last September, when a team of researchers drilling into the Greenland ice sheet reported that oxygen-isotope measurements from ice cores showed that air temperatures during the period from 8,000 to 40,000 years ago had fluctuated widely. A second team drilling in Greenland confirmed that observation in February and showed that the large oscillations in temperature had sometimes occurred over decades.[149] More precise measurements reported in July showed that those oscillations had occurred over the entire ice age, changing

[148] Fritz has the albedo being about 0.35 (p. 278).
[149] Hughes (p. 17) claims the resolution of ice-cores is in decades.

> every few thousand years from glacial to relatively warmer periods. (McDonald, p. A 15)

It is likely that the winds that occurred during the flood (Gen. 8:1) mixed warm air with the ice coming through the "windows of heaven." It is almost certain that ice also continued to rain down (outside the polar regions) as the planet approached the Earth. No doubt, this ice floated from the polar regions into the oceans during the flood. This ice carried stones that were dropped into the oceans when the ice melted (cf. Dott and Prothero, p. 513).

Winds During the Flood

The Scriptures mention winds at the end of the flood (Gen. 8:1). It is possible that these winds also existed during the flood. It is possible that these winds were caused by more than one phenomenon.

Emanuel, *et al.* theorize that a bolide struck the Earth, somewhere in an ocean and set up super hurricanes (hypercanes).

> Hypercanes are extraordinarily intense hurricanes whose energy production is so large that it cannot be balanced by surface dissipation, resulting in storms that are so intense that internal dissipation becomes important. These storms are hypothesized to occur when the degree of air-sea thermodynamic equilibrium exceeds a theoretically defined threshold value. Their circulations would penetrate to high altitudes in the stratosphere, where they could deposit large quantities of mass, including water vapor, condensed water, and volcanic ash. (Emanuel, *et al.*, p. 13,756)

Emanuel *et al.* claim these hypercanes could be created by the heat generated by the impact of a bolide and possible volcanic eruptions (underwater) which heated the ocean (pp. 13,763-13,765). These hypercanes are based upon a theoretical model (computer model), but there is no empirical evidence (cf. p. 32) for their existence. The Scriptures do speak of winds occurring during the flood (Gen. 8:1). The winds of Gen. 8:1 are at the end of the flood, but they may have occurred during the flood also. The hypercane theorized by Emanuel *et al.* should bring

extensive rainfall, therefore the timing is wrong for it to explain winds at the end of the flood.

Another source of winds during the flood is tidal forces. The Moon causes tides in the atmosphere of the Earth which have winds of about 1/20 mile per hour (Defant, pp. 106-110). If the planet that caused the flood had the mass of Mercury and came within 15,000 miles of the Earth, it would cause atmospheric tides several thousand times the present 1/20 mile per hour (cf. p. 107 for a discussion of increased tidal effects). These atmospheric tides would tend to rotate as the oceanic tides rotate – from the *Coriolis Effect* (*Coriolis force*).

Cosmic ice might be another source of the wind which passed over the Earth as the water assuaged (Gen. 8:1). Winds are usually caused by a difference in temperature as the heavier cold air rushes under the lighter warm air. The colder air in the polar regions would rush toward the equator and also help to change the climate. It might be significant that the Scriptures do not mention winds prior to Gen. 8:1.

The Effects of Winds During the Flood

If these winds were cyclonic in nature and corresponded with the rotating tides, they might produce regions on the surface of the Earth that geologists call "basins." Rotating waters (whether caused by high winds, tidal forces, or by both – as in the FFM) would produce areas with diminished deposition of sediment. These rotating waters would act like a giant centrifuge (cf. Footnote 37, p. 46) which would deposit the sediment in a somewhat circular manner outward from the center of the circle.[150] This would separate the various minerals according to their density. We would find veins of various metals in the sedimentary rock.

Another effect of these winds would be to dry out the land that was exposed. High winds caused by tidal effects would tend to

[150] This process would be similar to what occurs when one "pans for gold." They would not be perfect circles because of the movement of the planet causing the flood.

dry out the surface of the Earth. This author observed localized thunderstorms that caused muddy water to run into a small catch basin and soak into the ground in a few hours. This mud was then dried up by the dry winds that blew in western Oklahoma. Cracks formed in this mud as it was dried by the wind. If the waters of the flood were tidal in nature, there would be times during the flood that the waters would flow off the land and some part of the land would be exposed. During these times these winds would dry out the exposed surfaces of the Earth. At least two things would result from these drying winds. *First*, these high winds would cause extensive wind erosion of the parts of the land that were exposed. This wind erosion could produce sand dunes and other desert-like regions. These regions would then be covered with sedimentary rock during the next high-tide. (The reader should be aware that sand dunes [subaqueous dunes] are also produced in bodies of water – including the ocean.) *Second*, if mud was on the surface, it would dry out and crack and then be filled with sediment during the next overflowing of the waters. If the mud was formed from the rain during the 40 days of rainfall, it might not have marine fossils in it. Dott and Prothero have pictures of mudcracks in red shale from the Grand Canyon (p. 188). Dunbar and Rodgers also have pictures and a discussion of mudcracks (pp. 199-202) they state:

> In general, mudcracks may be considered one of the best evidences of non-marine deposition. …
>
> In some formations, however, mudcracked layers are interbedded with others bearing marine fossils. …
>
> Typical mudcracks occur rather commonly also in some of the impure layers in the Lower Ordovician[151] limestones of the Appalachian trough. There is no evidence here of non-marine deposition, and the mudcracks seem to have formed on a very shallow sea floor that was subject to intermittent exposure over considerable areas for at least a few months at a time. The nearest approach to a comparable

[151] A period in uniformitarian geology between the Cambrian and Silurian which supposedly occurred about 500 million years ago.

> environment in the modern world may be the Rann of Cutch east of the Indus Delta, an area of some 8,000 square miles lying within the belt of monsoon winds. During half of each year, while the winds are blowing onshore, it is a very shallow lagoon, but during the dry season the strong offshore winds drive the sea water out leaving its floor exposed to be extensively mudcracked. … it does suggest the possibility that persistent winds may at times have driven the water out of very shallow parts of some epeiric seas so as to expose considerable areas of the bottom long enough to permit mudcracks to form. (pp. 200-201)

This provides a good explanation of the mudcracked sedimentary rock found in a number of geologic formations. AAOEC have used these rocks to support their claim that these sedimentary formations could not have been deposited during the year of the flood.

It is the contention of this author that mudstone must be deposited rapidly and covered with other sediment rapidly in order to survive as mudstone. Mudstone contains large amounts of organic material. In aquatic environments benthic organisms tend to eat the organic matter in sediments and mudstone must be covered with layers of sediment so deep that these organisms cannot extract the organic matter. If the mud is dried and stays above water level for extended periods of time earthworms (or similar animals) will extract the organic matter from the mud. Without this organic matter the sediment will not become mudstone.

High winds would also be devastating to forests by uprooting trees and breaking trees. There is evidence that many trees were broken during the flood. Many of the trees found have been stumps with the tops of the tree having been broken off (cf. pp. 289 through 293).

A tidal flood would not necessarily cover all the land the first day of the flood. As the tides rose more animals were drowned by the waters. The winds dried out the surface of the Earth that was exposed and animal tracks were preserved in the sediment. These tracks were covered by the next tide and

preserved as fossil footprints in the rocks.

Other Phenomena Explained by Cosmic Ice

There are other physical phenomena that can be explained by the influx of cosmic ice. *First*, in Northern Canada and Alaska there are thousands of lakes that are oriented in a northwest to southeast axis. "Oriented lakes by the thousands lie on a common northwest-southeast axis, a phenomenon that intrigues scientists." (Zahl, p. 306) These lakes could have been formed by the impact of large chunks of ice (moonlets) that would have formed craters. These chunks of ice would not have fallen at a right angle to the Earth's crust; hence, the northwest to southeast axis of the craters.

Second, there exist ice-filled mounds that are called pingos.

> In Arctic Canada, Greenland and northern Siberia there are sporadic mounds and cones, covered with deeply fissured layers of mantle deposits which have been upheaved by intrusions of ground-ice … their elevation above the surrounding country being anything up to 140 feet. Many of them have a crater at the summit, sometimes containing a shallow lake during the summer months. These remarkable structures are called *pingos* (their Eskimo name), … They appear to form where unfrozen ground-water (a) is trapped between an underlying zone of permafrost and an overlying frozen zone, or (b) has access to such a position from a high intake area which gives it a hydraulic head like that of artesian water. (Holmes, p. 432)

These pingos could also have been formed by chunks of ice which were buried in the ground at the time of their impact. Diagrams and pictures of these lakes and pingos are available (Craig, p. 511, Holmes, p. 433, Lock, p. 280, Pihlainen *et al.*, pp. 1119-1122, Rennicke, pp. 29-33, and Zahl, pp. 306-307). These pingos have craters with ice in the crater and the explanation of them by Holmes (pp. 433-434) could easily apply to cosmic ice which had created a crater and been covered with more cosmic ice. Lock attempts to explain them without dealing with the craters and the burrowed-out ponds

near them (pp. 279-281). A possible explanation is that chunks of ice (moonlets of Mercury) came at low angles and bulldozed out a pond and was buried in the soil that it piled up when it made the depression.

Third, cosmic ice can explain the quick-freezing of the animals and plants (cf. the earlier sections of this Chapter). The mummification of both plants and animals is evident (cf. Guthrie, pp. 296 and 300).

> "… the forests are mummified; the wood is dry and somewhat compressed, but otherwise unchanged … with many trees reaching more than a hundred feet in height." (Francis, p. 57)

These phenomena are easily explained by cosmic ice that covered these plants and animals during the flood. The weight of the ice compressed the trees.

Fourth, cosmic ice that fell from the sky can explain the broken legs and pelvic bones of the Beresovka River mammoth.

> … a complete mammoth body was found near Siberia's Beresovka River … He had been caught up by some terrific force and carried some miles away from his feeding ground. He suffered broken leg and pelvic bones, and then, in a kneeling position, froze to death-at the hottest time of the year! (Hapgood, 1960, pp. 72-73)

Tolmachoff also discusses the injuries when he says the mammoth:

> … died of injuries received (the pelvis, a forefoot and a few ribs were found broken, as well as the indication of a strong hemorrhage) and also of suffocation … The death by suffocation is proved by the erected male genital, a condition inexplicable in any other way. (p. 35)

Other mammoths and rhinoceros fossils were also found to have died of asphyxiation (cf. Tolmachoff, pp. 57-58). Large amounts of ice could weigh heavily upon the mammoth and cause it to have broken bones. If the ice came from the sky (through the windows of heaven), it could cause hemorrhaging as it struck the mammoth. If the temperature of the ice were near absolute zero (-273° C ≈ -459° F), it would liquefy the

oxygen in the air and suffocate the mammoth.[152] This extreme coldness would also *quick-freeze*[153] the mammoth.

Fifth, large numbers of micrometeorites have been recovered from Antarctic ice. "The irregular particles appear to be unmelted, and have similarities with the fine-grained matrix of primitive." (Maurette, *et al.*, pp. 44-45). Since these micrometeorites are unmelted they might have been encapsulated in the cosmic ice when they entered the Earth's atmosphere. Only cosmic ice (temperature ≈ -459° F or -273° C) would prevent melting of these micrometeorites as they encountered the Earth's atmosphere. Celnikier discusses the physics of meteoritic descent into the Earth's atmosphere (pp. 524-535). If these particles were from the rings of Mercury, they would not be travelling at the velocity of normal meteors. Because of their lower velocity, they might not have enough kinetic energy to melt the ice.

Sixth, there is evidence of extensive cratering in Canada (W. Hartmann, pp. 85 and 95). Most of the cratering of the Earth has been obscured by erosion (wind, water, and ice melting [drift or till]). D. Hartmann mentions one crater at the south end of Reindeer Lake that is nine kilometers across (p. 85). "One geological province where the search for craters has been particularly fruitful is the Canadian shield, the region around Hudson Bay." (D. Hartmann, p. 95) Kerr mentions a 10-kilometer crater in Bosumtwi, Ghana and a 24-kilometer crater at Ries, West Germany (1990, p. 916). This author has personally viewed the Barringer meteor crater near Winslow, Arizona. The Chicxulub crater in Yucatan has a diameter of 180 kilometers (cf. Kerr, 1993b, p. 1518). This crater "lies buried beneath almost 2 kilometers of Yucatan sediment." (Kerr, 1993b, p. 1518) It is evident that this crater was formed during the flood. Some claim the Chicxulub crater has a diameter of 300 kilometers (cf. Kerr, 1993b, pp. 1518-1519).

Geologists have now identified almost 200 crater impact

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[152] The boiling point of liquid oxygen is -182.96°C = -297.33°F. This is the temperature at which it changes from a liquid to a gas.

[153] "to freeze food so rapidly that the natural juices and flavor are not lost" (Merriam-Webster) In our case – animals were frozen rapidly.

> sites on earth. And astronomers have discovered that the earth is embedded in a swirl of asteroids and comets. (Wade, p. 16)

Lunar Meteorites and Earth's Ice Caps

A number of lunar meteorites have been found in the Antarctic ice caps (Hill, Boynton, and Haag, pp. 614-616 and Delaney, pp. 889-890). The presence of these meteorites can be explained by pieces of the ice rings being accelerated to the Moon and dislodging parts of the Moon upon impact. These fragments of the Moon were then accelerated toward the Earth and were mixed with the ice raining down through the "windows of the heavens." This is a similar process to a child throwing a stone into a mud puddle and the mud splashes upon the face of the child. This ice would tend to reduce the temperature of the core of the Moon if the core were molten during the flood.

Roche's Limit and Planet Fragmentation

Encrenaz, Bibring, and Blanc wrote:

> In 1847, Roche[154] showed that a satellite in circular orbit around a central body would be destroyed by tidal forces if it came closer to the central body than a certain limit, the so-called Roche Limit. (Encrenaz, Bibring, and Blanc, p. 49)

Roche's Limit only applies to bodies that are large enough to have gravity that could have sufficient force to fragment rocks (the other body). The smaller body is fragmented by the larger body. Some astrophysicists think that this is the mechanism that produces the rings of planets. Saturn has at least two moons that have probably been fragmented, possibly by this mechanism.

> … a team of astronomers has confirmed that two small satellites of Saturn may be nothing more than collections of icy rubble. The moons in question, Janus and Epimetheus, lie just beyond the planet's main rings … This, it now seems clear that irregularly shaped Janus (220 by

[154] Edouard Roche – French astronomer.

> 160 kilometers in size) and Epimetheus (140 by 100 km) really are highly porous objects. This may be equally true of Atlas, Prometheus, and Pandora, which also skirt Saturn's main rings. It is possible that all five moonlets originated as coagulations of icy chunks inside the rings. (Anonymous, # 6, *Sky & Telescope*, p. 245)

If the planet that caused the flood (probably Mercury) had rings with moonlets, these moonlets could have been the large objects which caused the craters on the Moon and would also have caused similar craters on both the planet and the Earth.

If the planet came within the Roche Limit (Roche Radius), it would have fragmented and pieces of it would have been accelerated toward both the Moon and the Earth. This author does not think that the planet fragmented but this possibility exists. It is also possible that it was already fragmented when it approached the Earth-Moon system as the moons of Saturn (Janus and Epimetheus). Again, this does not seem reasonable because it would have diminished the tides, because the mass of the planet would be reduced, as the fragments of the planet were drawn toward both the Earth and the Moon. Since this did not occur (Gen. 7:24-8:5), it must not have fragmented.

Roche's Limit Gives a Range of Possible Distances for Planetary Approach

It is this author's contention that the planet that caused the flood was similar in size to Mercury.

Roche's formula (cf. Souami, et al.) is:

$L_R = 2.5\ R\ (\rho_p/\rho_s)^{1/3}$

L_R = Roche's limit, R = planetary radius, ρ_p = density of planet, ρ_s = density of satellite.

The following values were used in this formula: $\rho_{Earth} = 5.5$, $\rho_{Mercury} = 5.44$, $\rho_{Moon} = 3.33$, $\rho_{ice} = 0.999$, $R_{Earth} = 6{,}378$ km, $R_{Mercury} = 2{,}439$ km, and $R_{Moon} = 1{,}738$ km. The values of Roche's limit are in Table 3 (below):

Table 3

Roche's Limits

	EARTH	MERCURY	MOON
Mercury	16,003 km	NA	7,181 km
Moon	18,847 km	7,181 km	NA
Ice moonlet	28,155 km	10,728 km	6,490 km

These values give the closest the planet could have approached either the Earth or the Moon without fragmenting. It must have approached relatively close to both the Earth and the Moon because of the evidence of cratering on both the Earth and the Moon. Another factor is that there must be enough distance left for the rings to exist between the planets during the 150 days of Genesis 6-9. These rings would be captured by the Earth, the planet that caused the flood, and the Moon during this period. With each pass around the Earth the planet would come closer to the Earth and lose more of the rings to the larger gravitational field of the Earth.

Mountains/Craters on the Earth/Moon

During the flood the same planet would probably cause the formation of lunar mountains by the same mechanism, if the Moon had a molten core and a magnetic field. At present, it is not known if the Moon has a molten core. The mountains on the Moon are structured differently than those on the Earth, but the Moon is turning more slowly than the Earth and it has a very weak (almost non-existent) magnetic field. The gravitational field of the planet would probably not cause mountains on the Moon without causing all of the same phenomena that were caused on the Earth.

The mountains on the Moon were probably formed by different mechanisms than those on the Earth. It appears that the mountains of the Moon were formed by impact of objects that collided with the Moon.

> The history of the Moon, especially in its early stages, is punctuated by large-scale catastrophic events. Each of the larger crater-forming impacts threw debris at high velocity for hundreds of kilometres from the crater; … By far the most catastrophic lunar events were the impacts that formed large basins … Rocks surrounding the basin were strongly deformed into large faulted mountain blocks … Many craters that are less than 150 km in diameter display a mountain or cluster of mountains (sometimes in the form of a ring) rising from the floor of the crater; but between 150 km and 300 km there are always either central mountains or a ring of mountains within the crater. (Guest and Greeley, p. 26)

The reader should note two things about this quote. *First*, they admit that the Moon was shaped by catastrophic events, not uniformitarian events. Burgess agrees with this point: "Undoubtedly there was some kind of terminal cataclysmic bombardment of the Moon." (p. 123) *Second*, they link the mountains with craters. The impact of both cosmic ice (temperature ≈ -273° C ≈ -459° F) and debris from the crust of Mercury that was ejected from impacts, could have formed the mountains on the Moon. This violent period of about 150 days of incessant bombardment of the Moon by chunks of ice would have left large numbers of impact craters. The waters of the flood and the localized nature of the ice (concentrated at the polar regions by the magnetic field of the Earth) would have prevented the formation of large numbers of impact craters on the Earth.

If cosmic ice impacted the Moon, it could have dissipated heat from the core of the Moon and reduced the temperature of the core. During the 150 days of the impact (while the core was molten, and the crust was thinner) it would have caused volcanic eruptions.

> Gravitational anomalies associated with the large lunar basins such as Mare Imbrium and Mare Serenitatis were discovered … Unfilled or partially flooded basins, such as Mare Orientale, have less dense material within them. (Burgess, p. 105)

This author was unable to determine the nature of these

anomalies (whether or not the gravity was less than at other points or greater than at other points). Since ice is less dense than rock these anomalies might be chunks of cosmic ice buried in the Moon or craters where the ice melted and escaped to space because of the low escape velocity of the Moon (if these anomalies have less gravitational attraction). If these anomalies have a greater gravitational attraction, they could be explained by the impact of cosmic ice that quickly solidified the dense material before it flowed down after the impact. Beatty states:

> Clementine's improved maps of lunar topography and gravity paint a more complicated picture. For example, topographic profiles across the large near-side basins show that the mare basalts on their floors are only thick enough to account for about 20 percent of the associated mascons.[155] And some basins exhibit gravity "highs" even though little mare material appears inside them. Apparently the major basin-forming impacts caused huge mounds of relatively dense mantle to bow upward then freeze in place before gravity could restore equilibrium. (p. 33)

These discoveries made by the Clementine probe could be easily explained by cosmic ice freezing and solidifying the mare basalts. Scientists have theorized other explanations of these anomalies, but their explanations have problems. Similar anomalies exist on the Earth and the most reasonable explanation for both sets of anomalies is that they were caused by the same mechanism.

The Moon has extensive cratering at its south pole (Shoemaker *et al.*, pp. 1851-1854). Scientists theorize that the ice on the Moon would be from a comet.

> Any ice deposited in these frigid valleys from, say, comet impacts would be preserved indefinitely. Flying over the poles, *Clementine* beamed radio signals down into the craters. NASA antennas on Earth picked up the echoes, and researchers analyzed them for the characteristic reflective pattern of water ice. The preliminary results

[155] Mascons are any of the high-density regions below the surface of lunar maria that are held to perturb the motion of spacecraft in lunar orbit.

> suggest that spotty ice caps may in fact exist … At this point, we're encouraged. So far, we've seen signals that certainly look like ice. (Kluger, p. 92)

The cratering at the south pole of the Moon is "about 300 km in diameter." (Shoemaker *et al.*, p. 1852) In addition, the Moon has several other deep craters. "At least one newly surveyed crater, the south pole's Aitken Basin, is 6 miles (*9.7 kilometers – MRF*) deep." (Kluger, p. 92) It is possible that something else that has a reflective pattern similar to water is causing the echoes detected by the Clementine probe. Any ice deposited during the flood would need to be in deep craters to survive the searing heat of the Sun's rays.

The

> Davy chain, with its 23 craters in a line 47 kilometres long, has long puzzled astronomers. The chain does not point toward any large crater and the individual craters, which range from 1 to 3 kilometres in diameter, are better defined than standard secondary craters. (Hecht, 1994, p. 16)

A similar chain of craters has been found on the Earth.

> A line of eight circular geological features that stretches from southern Illinois to Eastern Kansas may mark where a fragmented comet or asteroid struck Earth … the craters (according to Rampino and Volk) actually show signs of an impact origin. These include central uplifts, highly shocked quartz grains, and extensive shattering of local rocks. (Anonymous #9, Astronomy, p. 26)

These chains of craters are easily explained by both meteorites and ice particles, from the ring of the planet that caused the flood, impacting the surface of both the Earth and the Moon. These meteorite ice particles would naturally come in a straight line (following a great circle path). Shaw states:

> a satellitic reservoir may have been dumped progressively and almost completely over a period of months following a major perturbation[156] by (1) a newly captured meteoroid, (2) a massive close encounter (atmosphere-grazing flyby

[156] Perturbation is a disturbance of the regular, and usually elliptical course of motion of a celestial body that is produced by some force additional to that which causes its regular motion.

…), or (3) an internal chaotic crisis – e.g., by tidal modulation of sensitive resonance states. (p. 206)

Shaw offers an alternative interpretation of the data given by Wolfe (cf. the quote on Shaw, p. 206 [above]):

> … a freight-train-like procession of intermittently clustered low-angle impacts … could have traversed the region of Wolfe's fossil site, but straddled it, and others like it, in leapfrog manner, with globally catastrophic effects of a multiple sequence of impacts releasing an immense cumulative impact energy. Such a globe-encircling multiple event would have created several large craters and many smaller ones, where any one of the latter might be interpreted as a "single small impact," but was really but one crater among many produced from the "tail end" of the procession of those objects that were retained for some period of time in geocentric orbits. (p. 207)

Shaw states:

> I have studied the geographical and temporal distribution of the known impact craters on Earth, finding-contrary to common belief but in accord with nonlinear-dynamical prediction-that it is not random. My reexamination of the cratering record reveals the persistence over time of at least three spatially invariant clusters of craters. (p. 30)

Monastersky states that Shaw found evidence of three sets of craters. "Instead of seeing craters spread randomly among all continents, he discerned three distinct clusters in North America, Eurasia, and Australia." (Jan. 28, 1995, p. 58) This is in harmony with the contention of this author that the planet that caused the flood made three and one-half passes (revolutions) around the Earth.

It is likely that this ice was deposited in various parts of the Earth as the planet circled the Earth during the 150 days when "the windows of the heavens" were opened. This would at least partially explain the asymmetrical distribution of the ice caps (cf. p. 148 for a related explanation). The ice was distributed more on the North American continent than on Siberia. It is likely that parts of India, southern Africa, South America, Australia, and Antarctica were bombarded with ice at this time. The fact that there is evidence for glaciation in

these places is one of the evidences given for plate tectonics. The plate tectonics advocate claims this proves that these regions were close to the south pole at some time in the past because these regions could not produce ice caps if they were in their present location. If this ice were derived from the ice rings of the planet that caused the flood, it would not be necessary for these regions to have been located near the south pole at one time in the past.

Wichman and Wood give an alternative explanation of the Davy Chain craters.

> Linear crater chains on Ganymeade and Callisto apparently provide an impact record of tidally disrupted bodies, like Comet Shoemaker – Levy 9, at Jupiter. We propose that the Davy crater chain on the Earth's Moon records a similar tidal disruption event in the Earth – Moon system. Most lunar crater chains result from either volcanism or secondary impacts, but the Davy chain differs in setting and appearance from these crater chains and instead shows morphologic similarities to the Jovian crater chains. While the Davy chain is much smaller than the Jovian crater chains, tidal disruption models indicate that this smaller size is consistent with the Earth's lower mass. (Abstract)

Tidal disruption could have occurred when Mercury passed between the Earth and the Moon or even as it passed near the Moon toward its apogee.

Kinetic Energy and Melting Ice

The kinetic energy of a moving object is expressed by the formula: $KE = ½ mv^2$. If the kinetic energy is greater than the energy required to melt the ice, the ice will melt. It would require a total of 906 kJ/kg of energy to melt 0 K (-273° C ≈ -459° F) ice (cf. p. 151-ff.) which would require an impact velocity of $v >$ (4,800 km/hour ≈ 3,000 mi/hour). The movement of the planet which caused the flood toward the Earth at (or near) the same velocity the ice rings were moving could enable

the ice to have a "soft landing."[157]

Concluding Remarks

Cosmic ice gives the best explanation of the physical phenomena observed in nature that is in harmony with the intent of God (universal destruction). It is evident that God brought a planetary body with ice rings close to the Earth, and the ice rings of the planet were deposited symmetrically around the magnetic poles of the Earth.

The polar ice caps cannot be explained by uniformitarian geological assumptions. The ice caps have evidence of having been deposited very quickly, having been extremely cold, and are likely from space (because they were extremely cold). These ice caps are implicitly linked with the flood.

In addition, planetary rings (composed mostly of ice) give an excellent explanation of the impact craters on the Earth. These craters would be arranged in clusters and would tend to follow a pattern as the planet that caused the flood circled the Earth. In addition, the Earth's magnetic field and the magnetic field of the planet that caused the flood probably interacted and caused these craters to follow different patterns. Another factor which probably caused differing patterns for the craters would be the changes in the angular momentum (cf. p. 106) of the Earth as the ice caps were deposited. There would also be a change in the angular momentum when the mountains were raised.

[157] A velocity low enough to prevent melting of the ice.

EARTHQUAKES AND VOLCANOES

CHAPTER TEN

Introduction

It is acknowledged that the internal evidence for the source of earthquakes is not as evident as that for the other aspects of the flood. Several factors will be considered at this point: (a) the Bible does not mention earthquakes prior to the flood and (b) earthquakes are used as a symbol of the judgment of God in many Old Testament passages (Isa. 29:6; Zech. 14:5; and Ezek. 38:19; cf. the Hebrew word רַעַשׁ [pronounced *ra'ash* – Strong's #7494). Since earthquakes are both destructive to life and property they must be caused as a result of sin. This along with "a" and "b" (above) gives credence to the position that earthquakes are the result of changes in the surface of the Earth which were brought about during the flood. Hence, the sins of man are responsible for earthquakes and not God, because God did not create the Earth with this phenomenon present.

The spinning motion of the Earth causes the diameter of the Earth to be about 28 miles (42 kilometers) greater at the equator than at the polar regions.[158] These differences in the polar and equatorial diameters of the Earth cause the Earth to be a giant gyroscope. This tends to keep the Earth upright and tilted in the same direction. The extra mass at the equator that rotates rapidly acts like the rim of a gyroscope. If God caused the crust (outer shell) to cool in such a manner that the equator was about 28 miles (42 kilometers) larger in diameter than the polar diameter at creation,[159] there would not be any strain upon the rocks. There would not be any earthquakes as a result of this lack of strain. Benioff has an extensive

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[158] The present equatorial radius of the Earth = 6,378 km = 3,964 miles and the polar radius of the Earth = 6,357 km = 3,950 miles. The value of the antediluvian radius of the Earth is unknown.

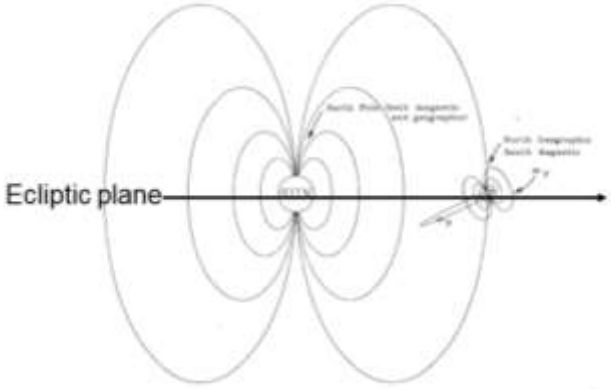
[159] It is this author's contention that the antediluvian Earth's equatorial diameter was more than 28 miles greater than its polar diameter. This will be discussed beginning on p. 204.

discussion of the strain on the whole globe (pp. 331-338).

Magnetic Fields One Possible Cause of Earthquakes and Volcanoes

The presence of a planetary body such as the one that the author believes caused the flood in the vicinity of the Earth would interact with the Earth's magnetic field if the planetary body had a magnetic field. This would cause a twisting motion to be exerted upon the Earth (a torque from the same principle by which an electric motor operates). This would change the position of the geographic poles as the two giant magnets aligned themselves. This could be quite strong especially if both bodies approached with the magnetic poles in opposition. These planets could possibly have their magnetic poles in opposition. Note that the Sun would influence both and their poles might be aligned with the Sun's magnetic field (cf. Figure 6).[160]

Figure 6
Approach of the planet above the ecliptic plane.



Any youngster who has played with magnets knows that like poles repel each other. This (and other forces) could shift the Earth upon its geographic axis and cause the Earth to have a new equator (new geographically). The Bible does speak of the Earth tottering in a context of a discussion of the flood (Ps.

[160] The Sun's magnetic field flips about every eleven years.

104:5-9 New American Standard Version). The KJV and ASV render this passage somewhat differently (removed KJV and moved ASV). This word (מוט – Strong's #H4131) is translated: **be shaken** (Ps. 46:3), **shall slide** (Deut. 32:35), and **slippeth** (Ps. 94:18). Gesenius defines this word as: "to totter, to shake." (p. 455)

Any change in the geographic position of the equator would cause the Earth's outer crust to have to crack apart in order to bulge the 28 extra miles (42 kilometers) if the Earth shifted by 90° on its axis.[161] These cracks do exist in the Earth's surface and are known as rifts. It would require a total of 100 miles (161 kilometers) of fractures to relieve the stresses on the Earth's crust. The great rift valley in Africa which runs through Palestine (this formed the Dead Sea) has no sedimentary rock in the bottom of the rift. The lack of sedimentary rock serves as evidence that the rift occurred after the flood. Incidentally, the bones of the men who have been found in this region in Africa are, no doubt, the bones of contemporaries of Noah. The incorrect dating of these bones (1,000,000+ years old) is a result of uniformitarian geological assumptions (note Chapters 6 and 13 for a discussion of why these assumptions are erroneous).

Other Phenomena Explained by Magnetic Fields

If the planet made three or four passes (probably three and one-half) around the Earth, it would shift the Earth on its axis to a new axis each pass. This would create plates or sections of the Earth's crust which would move due to the spinning motion of the Earth. If the Earth rotated (twisted on its axis) each time the planet passed the Earth, these plates would move in different directions. This would be caused by the same type of forces that cause tides in the Earth. The reader should study the various materials that explain the tides of the Earth. There are both low and high tides at the same time on various parts of the Earth. It is interesting that high tides occur on opposite sides of the Earth at the same time. This is all

[161] This author does not contend that the Earth shifted by 90° on its axis (it probably shifted much less than 90° [cf. Figure 7, p. 174]).

explained by the gravitational force equations and the vector forces[162] involved. The plate tectonics position may have some truth. The fact that most advocates of plate tectonics are AAOEC does not prove that some aspects of the theory are not true. Even AAOEC are right on some matters. Even AAOEC geological theories might have some truth in them.

The shifting of the Earth on its axis would explain why the magnetic poles of the Earth are not at the same location as the geographic poles (cf. Figure 7 [Butler, p. 7]). The reader should note that the north geographic pole of the Earth is a south magnetic pole. It is widely known that the magnetic field of the Earth has been moving since the time it was first measured. "Slow variation with time has been established for the magnetic inclination, which drifts towards the west at about 0.15° per year." (Encrenaz, Bibring, and Blanc, p. 137) This drift is discussed in a number of other books.

> The Earth's magnetic field is not a static affair. As early as 1634 it was noticed that at a fixed place the direction of a compass needle changes slowly with time. At London, for example, a compass needle pointed 11° east of true north in 1580; the direction changed gradually to 24° west of north in 1812; and at the present time a compass points 9° west of north. Thus, the Earth's geomagnetic pole wanders slowly with respect to the geographic pole. (Marion, p. 312)

It is the contention of this author that the drift either might be a "readjustment" of the magnetic field from the displacement it experienced during the flood, or it seems more likely that it might be related to the core rotation about a different axis than the remainder of the Earth.

The Earth's core rotates faster than the rest of the Earth Kerr states:

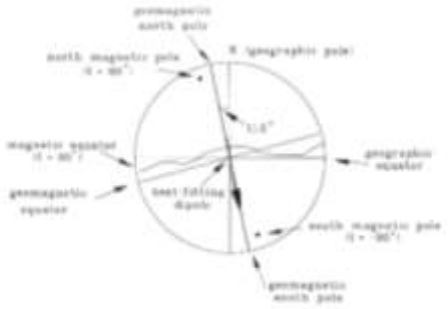
> … a team of seismologists announced last week that Earth's solid-iron inner core spins faster than the rest of the planet, gaining almost a tenth of a turn during the past 3 decades. (1996, p. 428)

Song and Richards claim the: "rotation rate is on the order of

[162] Forces acting in different directions.

1° per year faster than the daily rotation of the mantle and the crust." (p. 221) It is possible that the core does not rotate on the same axis (it is tilted from the rest of the Earth [cf. Figure 7]) and this explains the drift of the Earth's magnetic field.

Figure 7



One of the proofs of plate tectonics is derived from the evidence of the movement of the magnetic poles of the Earth. Stokes states:

> Paleomagnetic data have also shown that the movement of individual lithospheric plates must also be considered in any interpretation of polar wandering. Thousands of pole positions have been calculated from specimens collected throughout the world. It is known that for any specific time the location of the poles as given by specimens from one continent may be different from the location supplied by specimens from another continent. This is considered to be evidence for large-scale movements of individual continents – the rocks with their contained magnetic orientation have been shifted so that they no longer point where they originally did. Most of the data can be reconciled by shifting the continents backward along certain paths until they occupy the positions they did at the time of magnetization. When this is done, it becomes

> evident that there must have been both slippage of the entire lithosphere and movement of individual plates. (pp. 186-187)

Any correlation of the movement (or apparent movement) of the magnetic poles with the movement of the geographic poles of the Earth must explain how the magnetic field has moved extensively since 1634 (cf. Marion, p. 312 [quoted on page 173]) without the geographic pole wandering. During the period of time that the magnetic pole has been observed there is no correlation between any wandering of the geographic poles and the magnetic poles.

The shifting of the Earth on its axis would help to explain how some mountain ranges were elevated. The upward force exerted on the land masses, acting in conjunction with tides in the crust of the Earth, would shift them about the surface of the Earth, and when they were forced against another land mass, they would elevate mountain ranges (e.g. the Himalayan Mountains). Geologists refer to this as *foliation*.

No Antediluvian Volcanoes or Earthquakes

Geologists use the concept of isostasy to explain many of the geologic formations. Isostasy is "The concept that a condition of equilibrium is present in Earth's crust so that all rock masses are in balance." (Shipman, Wilson, and Todd, p. 689) This concept is sometimes difficult for one to understand without knowledge of the concept of density. An object can be placed into a liquid, and it will float if its density is less than the density of the liquid. For example, human bodies are denser than water (H_2O) and consequently will sink in pure water. But water with extensive amounts of impurities in it is denser than a human body and a human body will float in bodies of water, such as the Dead Sea (in Palestine) or the Great Salt Lake (in Utah). Even rocks will float in liquid rocks (magma) if the magma has a greater density than the rock. For example, aluminum will float in liquid mercury but will sink in water. The rock will sink into the magma and displace its mass in the magma. This is known as *Archimedes' Principle* in physics.

Prior to the flood there was no rain, no ice caps, and no extensive erosion to change the isostasy (cf. pp. 175-176) of the Earth (the antediluvian Earth was in perfect or near perfect isostasy). Since the flood, erosion and the melting of the ice caps are constantly changing the isostasy of the Earth this causes both earthquakes and volcanoes. The earthquakes and volcanoes release this energy and tend to keep the Earth in isostasy. Peltier has an extensive discussion of how melting ice caps affect the isostasy of the Earth (pp. 195-201).

If no pressure (stress, strain, or shear) existed upon the crust of the Earth, there would not be any internal forces to cause upward pressures and bring about volcanoes. Volcanoes cause death and destruction and must also be the result (a consequence) of sin. It may be significant that the Bible does not speak of volcanoes prior to the flood. It is reasonable to attribute volcanoes to the physical changes wrought by the flood. Peter states that the antediluvian world (κόσμος – pronounced *kosmos* or *cosmos*) perished (2 Pet. 3:6). Peter is informing the reader that the physical order was changed.

The Earth has not reached isostasy (cf. pp. 175-176) at this time.

> The land surfaces continue to rise even today … For example, the Baltic Sea is still rising about 1 m (3 ft) per century at its northern end and more slowly to the south, and will in time be lifted almost entirely above sea level. (Shipman, Wilson, and Todd, p. 691)

This rising of land masses contributes to the forces that cause both earthquakes and volcanoes. Stokes links this with volcanoes:

> Observation and theoretical considerations have convinced geologists that the crust of the earth sinks when it accumulates a sufficiently heavy burden of sediment, water, or ice, and that it rises when such loads are removed. The sinking of the overloaded area, they believe, is compensated for at deeper levels of the crust by an outflowing of plastic material. This condition of balance is known as isostasy and is of great fundamental importance

in shaping the surface. (p. 371)

Kay and Colbert state:

> And studies of present precisely determined elevations indicate that the southern end of Hudson Bay is still rising relative to the Great Lakes. The inevitable conclusion is that either the land happened to subside in the region that was being glaciated, and to rise thereafter, or that the glacial ice placed a load on the crust that produced isostatic adjustment, subsidence during glaciation followed by elevation after glaciation. (p. 584)

The movement of large quantities of water over the land would add a large amount of weight to the land masses, causing them to sink into the magma (cf. Stokes, p. 371 [*above*]). At the same time, the removal of this water from the ocean would cause the ocean floors to tend to rise as the forces pushing upward were greater than the downward force of the water pressure. This provides an additional mechanism for causing movement of the Earth's crust. Prior to the flood the forces on the Earth's crust were at equilibrium (all forces balanced out or $\Sigma F = 0$).[163] A 2.309 feet (0.704 meters) tall column of water weighs 1 lb./in.^{2} (6,894 N/m^2). If it is assumed that the water does not compress under the pressure of the flood water, the pressure of 10,000 feet (3,048 meters) deep water on the land would be 4,330.9 lb./in.^{2} (2.986×10^7 N/m^2). This same pressure would be removed from the ocean floor, creating a net upward pressure of this amount. These pressures are conservative values because the waters were probably deeper (Gen. 7:19) and the density of the water was surely greater than 62.4 lb./ft.^{3} (1 gram/cm^3) because the water contained large amounts of sediment and other minerals.

The sudden deposition of large amounts of cosmic ice upon the North American and Eurasian land masses would cause these land masses to become depressed in the magma. This would cause pressure to be transmitted throughout the magma elevating all other parts of the crust of the Earth. This is explained by *Pascal's Law*:

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[163] The mathematical expression ΣF means "the sum of the forces."

> Equation 18-3[164] shows that an increase in surface pressure P_0 results in the same pressure increase throughout the fluid. More generally, a pressure increase anywhere in the fluid is felt throughout the fluid – a fact first recognized by Pascal and now known as **Pascal's law.** Pascal applied this principle in his invention of the hydraulic press; today hydraulic systems, based on Pascal's law, are used to control machinery ranging from automobile brake systems, to aircraft wings, to bulldozers, cranes, and robots. (Wolfson and Pasachoff, p. 429)

If it can be established that there are plates upon which the continents rest, these plates were no doubt cracked apart by this upward pressure. Any movement of these plates could be explained by two mechanisms. *First*, these plates would be wedge shaped and the lowering of one plate would tend to raise other plates by the pressure against the adjacent plates (*this would primarily produce mountains*) and by forces upon the magma being transmitted by *Pascal's law*. *Second*, both the deposition of ice, water, any twisting action brought about by the interaction of the magnetic fields of the Earth and the planet that caused the flood, and the gravitational field of the planet that caused the flood attracting the equatorial bulge of the Earth[165] would change the position of the equator. Since the diameter of the Earth is different at the equator and through the poles (from spinning motion of the Earth – it is oblate), the crust of the Earth would tend to separate (spread apart). This would explain the apparent increase in the diameter of the Earth (cf. Smith, pp. 109-112). *Pascal's Law* is easily illustrated by a person sitting on a waterbed. If one person is lying on a waterbed and another person sits on it, the first person is moved, both upward and sideways, by the forces transmitted through the fluid. The force of the second person sitting on the bed is transmitted in all directions by *Pascal's Law*.

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[164] Equation 18-3, $P = P_0 + \rho gh$, ρ = density of the fluid, g = acceleration of gravity, and h = distance the fluid is depressed.

[165] My hypothesis is that the planet that caused the flood came in above the ecliptic plane.

Volcanoes and the Ozone Layer

The level of the ozone (O_3) layer is thought to be diminished by halogen gases (cf. Footnote 74, p. 74) from volcanoes (Symonds, Rose, and Reed, pp. 415-418). The recent alarm over the diminished ozone layer may have been falsely triggered by volcanic eruptions (O'Lone, pp. 91-92). It is known that volcanic eruptions send particles several miles into the upper atmosphere. It is also known that large amounts of halogen gases (gases which act as catalysts to break down the ozone [O_3] molecule) are in the eruptions of volcanoes.

> Thus, volcanoes emit large quantities of chlorine into the atmosphere, although the amounts injected into the stratosphere are apparently much smaller. The total mass of chlorine in the ambient stratosphere is about 0.5Mt. A major volcanic eruption may inject 0.5 to 5Mt of chlorine into the upper atmosphere. If most of the emitted chlorine remained in the stratosphere, chlorine concentrations could increase by two to ten times, leading to severe global O_3 depletions. (Tabazadeh and Turco, p. 1082)

If these volcanoes are a postdiluvian phenomenon, there would not be that source to deplete an ozone layer (if one existed) in the antediluvian world. It is not likely that the antediluvian atmosphere had an extensive ozone layer. The ozone layer is created by ultraviolet light (cf. page 72) being absorbed by oxygen molecules and a water vapor canopy would prevent this (cf. pages 72-75). If the antediluvian Earth did not have an extensive ozone layer, the living organisms would be subjected to radiation until an ozone layer was produced.

What Planet Was Involved in Causing the Flood?

The planet Mercury seems to this author to be the most likely to have been the planet which was nearly captured by the Earth during the 150-day period of the breaking up of the fountains of the deep and the windows of heaven. Several reasons for this choice are: (1) Mercury has a strong magnetic field, (2) Mercury has fault zones, (3) the orbit of Mercury has

a high degree of eccentricity[166] e ≈ 0.206 (its perihelion distance is 55 million km and its aphelion distance is 84 million km), (4) the surface topography of Mercury and the Moon are very similar (cf. Burgess, p. 124 for pictures), (5) the orbit of Mercury is presently inclined 7° with the ecliptic plane (Mercury's inclination was probably affected by the encounter with the Earth-Moon system and Venus), and (6) "Mercury's rotation is direct, about an axis exactly at right-angles to the plane of its orbit, and takes 58.65 Earth days." (Encrenaz, Bibring, and Blanc, p. 113) The rotation being at right angles to the plane of its orbit could easily be explained if its magnetic field and equatorial bulge both interacted with the Earth's magnetic field and equatorial bulge and both planets rotated to conserve angular momentum (cf. pp. 106-107). (Most of the movement was probably from the rotation to conserve angular momentum.) Mercury has not completely shifted on its axis to conform its magnetic field to the magnetic field of the Sun. The 58.65-day rotation period is about 1/3 of the 150 days of "the windows of heaven" and "the fountains of the deep." This is about what one would expect if the planet made three and one-half passes around the Earth in the 150-day period of the flood. As Mercury approached the Earth the rotation on its axis slowed until it virtually kept the same side directed toward the Earth (much as the Moon does – synchronous rotation [it is also called captured rotation or tidal locking]). It is likely that one side of Mercury has a gravitational anomaly that would indicate which side faced the Earth during the three revolutions around the Earth. The Messenger probe (NASA) found two gravitational anomalies that are located 20° north of the equator at about 25° east and 55° north and 177° east in 2008.[167]

The antediluvian orbit of Mercury probably had its perihelion between the orbit of Earth and Venus and the aphelion just beyond the orbit of the Earth. Mercury was probably several

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[166] The formula for eccentricity "e" is: $e = (d_a - d_p)/(d_a + d_p)$. Where d_a = distance at aphelion and d_p = distance at perihelion.

[167] One gravitational anomaly was probably created when Mercury caused the flood, and the second anomaly was probably created when Mercury interacted with Venus (cf. figure 8).

degrees above the ecliptic plane that made it pass about one million miles above the Earth.[168] The planet Pluto[169] crosses the orbit of Neptune above the ecliptic plane with its perihelion between Uranus and Neptune and its aphelion beyond the orbit of Neptune in the same manner I hypothesize for Mercury.

The topography of Mercury is similar to that of the Moon, and it must have undergone a similar catastrophic event or similar events. If Mercury had ice rings and passed between the Earth and the Moon, there would be three major gravitational forces acting upon the rings. These forces would act at different directions and part of the ice rings would be drawn toward Mercury, part toward the Earth, and part toward the Moon. Even AAOEC admit there is a strong resemblance between the topography of Mercury and the Moon.

> Undoubtedly there was some kind of terminal cataclysmic bombardment of the Moon … The question is whether it occurred simultaneously with the bombardment of Mars, … and one of Mercury, which formed the Caloris basin … Mercury and the Moon went through a stage of crustal genesis followed by the formation of large impact basins that were later filled by extensive lava flows. (Burgess, pp. 123 and 125)

Evidence that Mercury has ice in its polar regions has been discovered by Mariner 10 and radar images of Mercury (Anonymous #10, *Sky & Telescope*, p. 12). The ice is in or near craters (cf. the pictures in *Sky & Telescope*, p. 12).

> Slade and colleagues think it more likely that extensive ice fields could be buried several metres deep beneath Mercury's soil. Temperatures would be permanently cold there, loss of water molecules would be inhibited, and-of course-the soil would have hidden the ice from mariner's cameras while allowing penetration of the radar waves. (Chapman, p. 504)

This ice seems to be buried under the surface of the ground of

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[168] Just outside Earth's *Hill sphere* – which is about 932,000 miles (cf. Souami et al.).

[169] Pluto is no longer considered to be a planet – it is a dwarf planet.

Mercury. This is what one would expect if it were cosmic ice that was buried as a result of impact with the surface of Mercury. This ice may be similar to the pingos of Canada and Alaska which are discussed in Chapter 11 (pp. 212 – ff.). The absence of either sunlight (the polar regions of Mercury are perpetually shaded from the Sun) or a dense atmosphere to carry the heat by convection keeps the ice from melting. Later (1991-1992) radar probes of Mercury have revealed new information that makes the likelihood that Mercury has ice in the polar regions even greater.

> Our new images prove the connection between the radar anomalies and polar craters, and provide strong support for the notion that the radar-bright material is concentrated in permanently shaded crater floors. The most plausible model still seems to be one in which shaded crater floors act as cold traps for water ice, thick deposits of which provide a low-loss medium for enhanced volume backscatter of radio waves. Conclusive proof of the existence of polar ice will require spacecraft missions equipped with ultraviolet or neutron spectrometers and, possible, sampling penetrators. (Harmon *et al.*, p. 215)

But Mercury is so close to the Sun that it cannot sustain ice for eons of time. "However, permanent shadowing alone may not guarantee temperatures low enough to sustain ice." (Harmon *et al.*, p. 215) This fact might give conclusive evidence that the ice on Mercury was deposited quite recently. Slade *et al.* disagree with Harmon: "Water ice is likely to be stable at the temperatures of the polar regions of Mercury on time scales longer than several hundred million years." (p. 638) This author was unable to obtain mathematical information of why Slade thinks the polar regions of Mercury can sustain ice and why Harmon does not think they can sustain ice.

Because Mercury is presently so close to the Sun any object that strikes Mercury is traveling at a high rate of speed. The gravitational field of the Sun accelerates objects to very high speeds as they approach the Sun. It is not likely that the icecaps on Mercury were produced by comets if Mercury was in its present orbit. Lewis states:

> Comets are very rich in water, but they impact on Mercury at extremely high speeds, sometimes surpassing one hundred kilometers per second. So energetic is the impact explosion that it not only removes all the water in the impactor, but a fair amount of the surface of Mercury along with it. (p. 136)

If these ice caps were deposited during the flood as the ice rings were drawn toward Mercury, their velocity at their impact would be small and their kinetic energy would be small enough for the ice to survive the impact.

The planet Venus is probably not the planet that caused the events of Genesis 6-9. Venus is large enough that it would have perturbed the orbit of the Moon and caused the orbit to have a greater (cf. footnote 166, p, 180) eccentricity than it presently has ($e \approx 0.007$).[170] If the eccentricity was larger than it presently is, the level of the ocean tides would vary considerably. In addition, Venus does not appear to have a magnetic field as the planet that caused the flood probably had. It is possible that Mercury and Venus interacted after the Sun pulled Mercury away from the Earth. Some scientists have theorized that Earth once nearly captured the planet Venus. It is possible they have the wrong planet in mind and that it was possible that the Earth nearly captured Mercury. Encrenaz, Bibring, and Blanc discuss this theory (p. 120). "This indicates that the rotation of Venus (like that of Mercury) has been braked during the course of the planet's evolution." (Encrenaz, Bibring, and Blanc, p. 120) Venus and Mercury might have interacted, with the gravity of Venus (in inferior conjunction with the Earth)[171] aiding the Sun to capture Mercury by the "slingshot effect." This effect is used by NASA to send objects from the low orbit of the space shuttle into deep space. The booster rockets that are used by NASA are not powerful enough to send out probes without the aid of gravity from both the Moon or the Sun and another planet. This would help to explain the craters on the surface of Venus.

Extrapolating from the results of the first mapping cycle,

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[170] A geometric figure with an eccentricity of $e = 0$ is a circle.

[171] Inferior conjunction is when a planet passes approximately between the Earth and the Sun.

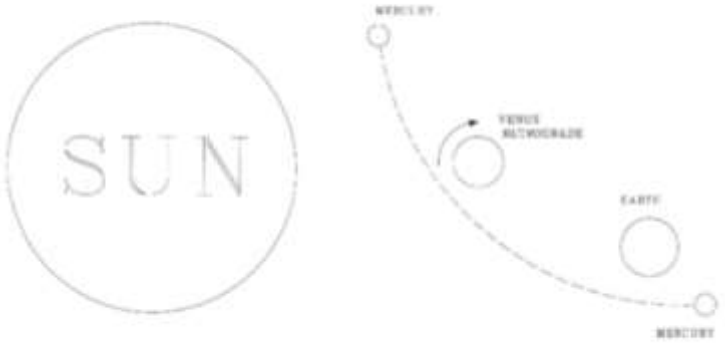
project scientists expect that all of Venus has only about 1,000 craters larger than a few kilometers across. (Burnham, p. 35)

Some of the craters are similar to the northwest-southeast oriented lakes mentioned by Zahl (p. 306). (cf. p. 158 for a discussion of these lakes.)

Within 30° of the equator are craters that lie at the focus of large, parabola-shaped dark markings, 500 to 1,000 kilometers long. The dark parabolas all lie parallel to each other and all open toward due west. (Burnham, p. 36)

If Venus aided the Sun in pulling Mercury away from the Earth (cf. Figure 8), it would have interacted with Mercury after most of the material in the rings was depleted. This might explain the retrograde rotation of Venus – especially if Venus were tidally locked with the Sun at this time. The interaction of Mercury with Venus would probably create a gravitational bulge on Mercury (where Mercury kept one side to Venus during the encounter). There should also be a gravitational anomaly on Venus.

Figure 8



Lewin reports that the magnetic field of the Earth changed in a matter of a few days.

One of the lava flows was 2 metres thick, and a second 1.5

> metres thick. The thicker lava would have taken two weeks to solidify from its outer surface through to the interior, and the thinner one slightly less. The magnetism of the rocks, from the surface to the centre of the lava flow acts like a natural compass needle, recording the direction of the surrounding magnetic field at the time each part solidified. Coe and his colleagues found that the needle swung through 50° in the first case and 48° in the second … The observations imply that at the time the lava was cooling the magnetic poles were moving between. 3° and 8° a day. (p. 26)

With regard to this rapid change Coe and Prévot state:

> Thus, the balance of evidence now in hand weighs in favor of rapid geomagnetic field variation. The question then arises whether the source of this variation was inside or outside[172] of the earth. The rate of change (at least 300 gammas/day) is much greater than the secular variation of the internal field observed in modern times. (p. 297)

Coe and Prévot reject any possibility the rapid field variation was caused by external means. They do not consider the flood model (FFM) postulated by this author. This rapid change of the direction of the Earth's magnetic field is readily explained by the interaction of the magnetic field of Mercury with that of the Earth as Mercury passed the Earth during the flood. The AAOEC is without a theory for this rapid change in the direction of the Earth's magnetic field (as evidenced by the remanent magnetism of the lava).

This interaction is depicted by figures 9 and 10 (below). The planet that passed the Earth during the flood (probably Mercury) is represented by the letter "p" in the diagrams.

[172] This would fit the Fox flood model (FFM).

Figure 9

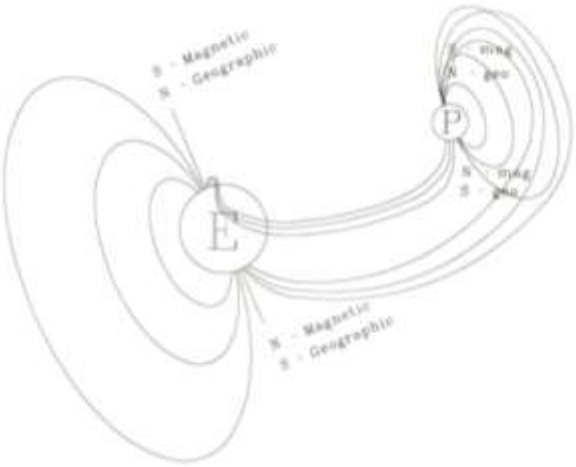
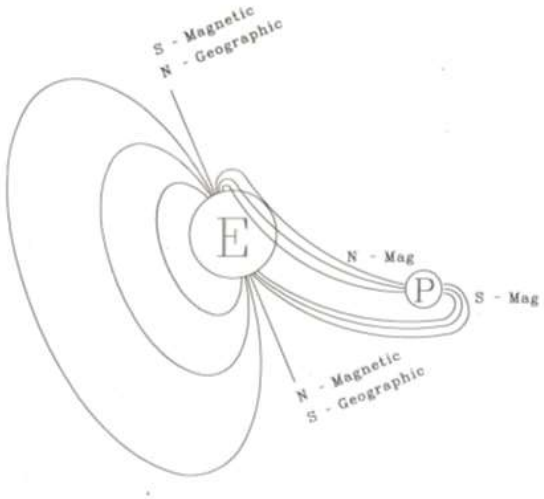


Figure 10



The Life of the Earth's Magnetic Field

In addition, the magnetic field of the Earth is decaying exponentially, and the rate of decay should cause it to cease to exist within about 9,000 years (Barnes, p. 30).

> Slow variation with time has been established for the magnetic inclination, … and for the magnetic-field intensity, which decreases by about 20 gammas per year. (Encrenaz, Bibring, and Blanc, p. 137)

Barnes has demonstrated from the decay rate of the Earth's magnetic field that the Earth is quite young. The AAOEC is forced to prove there have been field reversals or that the field has collapsed and been restarted by some mechanism. The forces required to either start up a magnetic field with the strength of the Earth's field or to reverse the field are astronomical! Some claim the decay is linear and that it will cease to exist in 3991 AD (cf. McDonald and Gunst, p. 1). It would be a rare occurrence indeed for something physical to decay in a linear fashion as McDonald and Gunst claim, rather

than an exponential fashion as Barnes claims. Barnes has written an excellent treatise on the magnetic field of the Earth and this author does not know of anyone who has answered all of his arguments. From Fourier analysis we learn that a linear decay of the magnetic field would generate a wide range of harmonics in the magnetic field. These harmonics would appear as field reversals in the remanant magnetism of the rocks. Quite frankly, I doubt their claim that the magnetic field of the Earth is decaying in a linear fashion. It is my experience, from doing both graduate work in electrical engineering, physics, and mathematics and undergraduate work in mechanical engineering that things rarely (almost never) decay in a linear fashion. Note the dilemma of AAOEC in this matter:

> If the Earth's magnetic field decays in an exponential (base "e") manner, the Earth cannot be old (the field would be too strong – it would have melted the Earth's crust).
>
> If the Earth's magnetic field decays in a linear manner, harmonics would be generated (explaining the apparent reversal of the Earth's magnetic field).
>
> With either option, the Earth does not have to be billions of years old.

What Causes the Earth's Magnetic Field?

There are three basic kinds of magnets: permanent magnets, temporary magnets, and electromagnets. Temporary magnets are caused by other magnets temporarily aligning the magnetic domains of the ferromagnetic material and causing the material to become a magnet. This could be caused by either a permanent magnet or an electromagnet. Permanent magnets are caused by the alignment of the magnetic domains into a permanent arrangement so that they will not return to the lower energy state (a random alignment). Electromagnets are caused by the flow of electricity since each charged particle (usually electrons, but on some occasions protons) has a tiny magnetic field. The sum of the individual magnetic fields of

the charged particles can create an intense field.

The Earth is not a temporary magnet because there is no mechanism that would temporarily magnetize the Earth. The solar wind does not have sufficient intensity to create a field anywhere near the strength of the Earth's field. There is no permanent or electromagnet near the Earth with sufficient strength to temporarily magnetize the Earth.

The magnetic field could not be a "permanent magnet." The rock is molten and above the *Curie temperature* (or *Curie Point*) of the ferromagnetic materials in the rock.

> All ferro-magnetic substances have a definite temperature of transition at which the phenomena of ferro-magnetism disappear and the substances become merely paramagnetic. This temperature is called the "Curie Point" and is usually lower than the melting point. (Hodgman, Weast, and Selby, p. 3082)

The molten rock that is flowing in the interior of the Earth is certainly above the Curie Point of the ferromagnetic materials in the Earth (unless the factors change due to the increased pressure or for some other unknown reason).

It is evident that the Earth must be an electromagnet of some sort. The reader should be cognizant of the fact that the most widely accepted theory for the existence of the Earth's magnetic field is the "dynamo theory." This theory has the field being the result of the movement of liquid (molten) rock from within the core of the Earth in an asymmetrical manner (an electromagnet).

> Most geophysicists agree that geomagnetism is generated by electrical currents circulating deep within the Earth. The currents arise when material moves in the iron-rich liquid of the Earth's outer core. Though the details of this "dynamo mechanism" are elusive, many theorists now believe that the flow of molten minerals in the outer core forms a chaotic system. Out of the chaos come periodic magnetic reversals, and the "wobbling" of the position of magnetic north. (Lewin, p. 26)

There is no evidence for asymmetrical movement in the core

of the Earth. Barnes disputes the dynamo theory (pp. 63-69, 113-114, and 117-118). There is no known mechanism that would reverse the magnetic field of the Earth (cf. Shipman, Wilson, and Todd, p. 681). A reversal of the magnetic field would require a reversal of the flow of the molten rock in the core of the Earth and would entail massive forces just to change the momentum of the rock. In addition, the AAOEC is forced to accept ridiculously large velocities for the molten rock.

> This would imply that material in the Earth's outer core was flowing at a speed of several kilometres an hour which is about 1000 times faster than the rate geologists had previously assumed. (Lewin, p. 26)

The dynamo theory has been dealt a severe blow by the discovery of magnetic fields on both Mercury, the Moon, and Ganymede (a moon of Jupiter).

> The experience of Apollo has added another mystery to the involved magnetic histories of planetary bodies. Once only the Earth and Jupiter were known to have significant fields and the simple dynamo theory seemed adequate to explain them. Now with a significant field detected on small, slowly rotating Mercury, while the slowly rotating Moon, with only at best a small core, also shows a remanent field, the whole theory of planetary magnetism is having to be restated. (Burgess, pp. 112-113)

Marion also discusses the problem of the magnetic field of the Moon.

> Before the first lunar landing by the Apollo astronauts, scientists had devised relatively simple descriptions of the Moon's structure. In none of these models was there any suggestion that the Moon possessed (or had ever possessed) a magnetic field. It seemed highly unlikely that the core of the Moon had ever been molten, as the Earth's core still is. Therefore, there should never have been any internal currents to produce a lunar magnetism. But the investigations carried out during the Apollo missions revealed in the surface rocks a small remnant magnetism that could have been caused only by exposure to a small magnetic field for a period of at least a billion years … None

> of the several theories that have been developed to account for the Moon's magnetism is entirely satisfactory. More information will have to be acquired and further theoretical investigations will have to be carried out before we have a convincing explanation of the magnetism of the Moon. (pp. 315-316)

Isbell and Murrill state:

> … scientists studying data from space physics instruments on the spacecraft have made the major discovery that planet-size Ganymede possesses its own magnetosphere … The finding indicates that Ganymede, which is three-quarters the size of Mars, very likely creates its own magnetic field. (p. 1)

Barnes asserts that the field is caused by an electrical current which was set into motion at the creation of the Earth (pp. 12-ff.). This explanation is totally unacceptable to the AAOEC, but it is in accord with the empirical evidence. The worldview of the atheist/agnostic forces him to assume the Moon is 4+ billion years old – this creates problems for him and the magnetic field (cf. Fox, 2024, Appendix V).

Has the Earth's Magnetic Field Reversed Polarity?

It is the contention of this author that the magnetic field of the Earth was displaced by the planet (Mercury) that caused the flood. This displacement caused distorted remanent fields in some of the strata of rock laid during the flood. The interaction of the two magnets caused fields to move throughout the Earth at all different angles and made it impossible to determine the true direction of the Earth's magnetic field from remanent fields.

There are anomalies in the magnetic field of the Earth. It is far from a textbook bar magnet.

> … charts giving the distribution of magnetic-field intensity at the surface of the globe clearly show that there are important differences from a perfect dipolar field. These are magnetic anomalies, which may be positive or negative,

> and which may be small-scale (local or regional) or of continental scale, such as the positive anomaly in Siberia, and the negative anomaly in Brazil. (Encrenaz, Bibring, and Blanc, p. 137)

If the magnetic field has reversed polarity, it required astronomical forces to reverse it. Some AAOEC claim the reversals of the field are caused by cataclysmic events.

> The main geomagnetic dynamo is assumed to be a steady dipole oscillator which undergoes a polarity reversal only when this is triggered by random fluctuations of the much more rapidly varying nondipole field. (Cox, p. 239)

Some claim that either an asteroid or a comet impacted the Earth and reversed the magnetic field. Schneider and Kent determined that neither comet nor meteorite impacts have caused the Earth's magnetic field to reverse (Anonymous #11, *Science News*, p. 158 and Kerr, 1990, p. 916). Barnes has an extensive discussion of the question of the reversal of the Earth's magnetic field (pp. 35-37, 70-80, 114-115, and 128-131). This author has not repeated the arguments made by Barnes. The reader should study them for himself. Davies argues:

> … how can an impact giving a 10^{-9} change in the Earth's angular momentum (cf. pp. 106-107) produce a magnetic reversal when atmospheric drag already produces a factor of 10^{-7} and shows no associated magnetic effect? (p. 10)

If the field is oscillating, it should collapse to zero field strength and change direction at regular intervals. "In all of these characteristics the earth's field operates like a remarkably symmetrical oscillator." (Cox, p. 238) This requires two basic types of energy storage mechanisms, capacitance and inductance. The inductance of the Earth has been calculated to be about 1 Henry by Barnes (p. 23). The equation for resonance of an electrical circuit $f = 1/(2\pi[LC]^{1/2})$ yields a value for the capacitance $C = 1/(4\pi^2 f^2 L)$. With a frequency of 1 reversal every 10,000 years the frequency, $f = 3.171 \times 10^{-12}$ Hertz (cycles/second) and an inductance L = 1 Henry the value of capacitance $C = 2.52 \times 10^{21}$ Farads. Where

does one obtain such a capacitor? Any self-respecting physicist, electrical engineer, or electronic technician knows this is ridiculous. It was not until recent times (the last two decades) that capacitors of 1 Farad or more were commercially available. If the capacitance and inductance involved is causing the Earth's field reversals have not changed their values, the field reversals should be periodic – occur at regular intervals.

The AAOEC is forced to claim the reversal rate is on the order of 1 reversal every 10,000 years because the evidence is clear that the field would be too large if extrapolated back in time at its present rate of decay.

> Apparently, the field undergoes a decrease in strength lasting about 10,000 years, then comes a period of about 1000 years during which the reversal takes place, and finally there is a buildup of the field with the opposite polarity. This same process is repeated with intervals of 50,000 to a few million years. The last reversal occurred approximately 12,400 years ago. (Marion, p. 313)

For the Earth's magnetic field "The intensity of the field is weaker at the equator than at the poles. Present values are respectively 30 000 and 60 000 gammas (0.3 and 0.6 gauss [*sic*])." (Encrenaz, p. 137) But some AAOEC claim the field is decaying in a linear manner.

> Since the time of Gauss' measurements the earth's dipole moment has decreased, sensibly linearly, at approximately the rate of 5% per hundred years. Assuming these rates to persist, our analysis discloses that the dipole moment will vanish in A.D. 3991. (McDonald and Gunst, p. 1)

If the decay is linear and two points on the graph are known, it is a simple matter to determine the equation of the decay in the slope intercept form (from two points [1989, 0.6 Gauss and 3991, 0 Gauss]). From this equation it is quite simple to extrapolate backwards in time to a point where the magnetic field would be ridiculously high (this would be the maximum age of the field). This process should be easy for a second-year high school algebra student. With the variables B = field strength and t = time the equation becomes: $B = -2.997 \times 10^{-4} t + 1.196$. At t = 0 (the birth of Christ – Messiah) the field

strength would have been 1.196 Gauss. According to Marion (p. 317) the field strength of the Sun is about 1000 Gauss. From the equation derived from the assumptions of McDonald and Gunst the Earth's field strength would be 1000 Gauss in about 3.3 million years if it was extrapolated backwards in time. The crust of the Earth would melt long before that time from induced currents (induced from Faraday's Law of electromagnetic induction) producing heat ($P = I^2R$).[173]

Problems with the Field Reversal Theory

There is no mechanism other than cosmic forces that could reverse (by shifting the Earth's axis) the magnetic field of the Earth.

> The occurrence of this kind of polar shift has seldom been suggested, for the reason that no force capable of shifting the axis has ever been imagined, other then (sic), possibly, a major planetary collision.
>
> A second way of shifting the poles would be not to change the direction of the axis (let it point to the same stars as before), but merely to shift the earth around on its axis so that different places on its surface would be at the poles. This suggestion also has run into difficulties. The main obstacle to such a shift is the stabilizing effect of the equatorial bulge of the earth. The earth is not a true sphere, of course, but a slightly flattened spheroid …
>
> During the nineteenth century some of the titans of geology, including James Clerk Maxwell and Sir George Darwin (son of Charles Darwin), considered this problem, and they decided that the stabilizing effect of the equatorial bulge was so great that no conceivable force originating within the earth could make it shift on its axis. They therefore dismissed the idea of any shift of the poles as impossible … A third way to conceive of polar wandering is through the sliding of the earth's whole outer shell over semiliquid layers below. This idea was suggested long ago,

[173] P = power in Watts, I = current in the crust of the Earth in Amperes, and R = resistance of the crust of the Earth in Ohms.

> like most good ideas, but the fellow who first advanced the notion, Damian Dreichgauer, did not have enough influence to impose the idea on his contemporaries. (Hapgood, 1970, p. 3)

This third way postulated by Dreichgauer is one mechanism that this author considers to be likely to have caused orogenesis (mountain building), volcanism, earthquakes, and continental drift. The outer shell of the Earth was pulled by tidal forces and the momentum imparted by these forces pulled different parts of the shell in different directions. The conservation of this momentum still contributes to movement of the different plates that originally moved in different directions from the tidal forces of the planet that caused the flood (Mercury) and the changes in isostasy (cf. pp. 175-176) during the flood.

The AAOEC has encountered several more problems with his *field reversal theory*.

> Every few hundred thousand years, the direction of the Earth's magnetic field reverses. Until now, everyone assumed that this happened gradually, over thousands of years. But a team of geophysicists from the US and France has found evidence that reversals may be much more sudden. (Lewin, p. 26)

A rapid field reversal has other implications that make explanation of the reversal even more difficult.

> This would imply that material in the Earth's outer core was flowing at a speed of several kilometres an hour which is about 1000 times faster than the rate geologists had previously assumed. (Lewin, p. 26)

Encrenaz claims the movement is much slower:

> It appears that these mantle convection currents occur at rates of a few metres per year at the most: we are not dealing with a liquid medium, but with a solid, and it is only on a time-scale of hundreds of thousands of years that the mantle behaves as a convective fluid. (p. 133)

The AAOEC claims the field decreases to zero and reverses its direction.

> The dipole field decreased during this time at a remarkably

> uniform rate, and it will, if the rate remains constant, pass through a zero point about 2000 years from now and then reverse its polarity. (Cox, p. 237)

If the magnetic field of the Earth decreased to near zero field strength and then reversed its direction over a period of thousands of years (or even for a few years), it creates a problem for animals which use the magnetic field of the Earth to migrate (birds, fish, insects, etc.) or to find their way home (the honeybee etc.).

> Certain bacteria, insects, birds, and fish seem to use miniature magnetic compass needles made of magnetite, and biologically generated and localized magnetite crystals have been found in a variety of other magnetically sensitive species. On the other hand, some marine elasmobranchs[174] detect the Earth's field inductively by swimming through field lines. (James Gould, p. 491)

Animals of all kinds use the magnetic field of the Earth to guide them in their migrations and day-to-day movements.

> Orientation using information from the geomagnetic field was first discovered in birds more than two decades ago. … Since then, a large number of reports have revealed that a magnetic compass sense is widespread among birds and other animals. (Akesson, pp. 1157)[175]

In addition, bees use the magnetic field of the Earth to return to their beehives after searching for nectar and pollen.

> When honeybees navigate and build honeycombs, they use their bodies as tiny compasses guided by the Earth's magnetic field, … Honeybees (*apis mellifera*) are among the many organisms which can sense the Earth's magnetic field through magnetoreceptive cells. (Spinney, p. 16)

Termites also use the magnetic field of the Earth to move through their tunnels (cf. Anonymous #12, *New Scientist*, 1976, p. 391). Sea turtles use the magnetic field of the Earth to navigate in the ocean.

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[174] Elasmobranchs are any of a subclass (Elasmobranchii) of cartilaginous fishes that have five to seven lateral to ventral gill openings on each side and that comprise the sharks, rays, skates, and extinct related fishes.

[175] Cf. Gulson-Castillo, et al.

> Turtles seem to carry a remarkable sophisticated magnetic compass in their heads. The compass lets them use Earth's magnetic field … to tell one direction from another. More importantly, the compass enables them to sense how far north or south they've come. (Seachrist, pp. 661)

Phillips and Borland conducted research with amphibians and determined that they use the magnetic field of the Earth to determine their locations with respect to the shore (cf. Phillips and Borland, pp. 796-797).

> Sensitivity to the earth's magnetic field plays an important role in many aspects of vertebrate orientation … Recent neurophysiological evidence … suggests that the magnetic compass in vertebrates is linked to the visual system. (Phillips and Borland, p. 796)

Frankel lists a number of other organisms that are either oriented with or navigate by the magnetic field of the Earth (pp. 85-103). If the magnetic field collapsed to zero, it would disrupt the daily lives of many animals and would cause the extinction of many species.

Kenneth Lohmann experimented with turtles and

> … a magnetic coil system that would create a field around the swimming turtles. He started the turtles off … east … then Lohmann rocked their world, turning on the coils and reversing the field so that it flowed from north to south. Sure enough, the turtles reversed too: They stopped swimming east and began swimming towards the new "magnetic east," which, since the field was reversed was really west. (Seachrist, p. 661)

It is evident that the magnetic field has not collapsed to zero level because these species are not extinct. Even instantaneous, or almost instantaneous, reversals would disrupt the migrations of these animals (as with the turtles in the research conducted by Seachrist) and bring about their extinction.

Another factor associated with a field reversal which would

cause extinction of organisms is the period of time that the field was zero or near zero would allow extensive amounts of cosmic radiation to bombard the Earth. Cosmic rays are high energy nuclei of atoms coming either from the Sun or other stars. The two types of cosmic rays are solar cosmic rays and galactic cosmic rays. Galactic cosmic rays have a much higher energy level but are much less intense than solar cosmic rays. This cosmic radiation would cause extensive mutations of both plants and animals. This problem is discussed by several writers (cf. Cornwall, Black, etc.).

> Cosmic rays create radioactive isotopes in the atmosphere, (…), which lead to three radiation hazards. Radioisotopes[176] contribute to the background radiation; ingested radioisotopes give an internal radiation dose; and radioisotopes incorporated in the genes may destroy the gene from the violence of their decay. At a polarity reversal, the production rate, the concentration and the hazard of these isotopes will increase. (Black, p. 230)

The article by Black relates to the question of whether or not field reversals cause extinctions of fauna. Black admits that these reversals would cause mutations of organisms. Not only does a zero field allow more radioisotopes to be created, but a diminished field (as occurred after the flood) would allow more radioisotopes to be created. The decrease in the magnetic field strength has been one contributing factor in mutation of both man, animals, and plants.

Removal of Earth's magnetic field would subject the atmosphere to the solar wind. The solar wind would remove atmospheric molecules.

The AAOEC admits that he has no mechanism for his reversal hypothesis. "The brief periods of a few thousand years of switch between the two polarity states are called reversals. Reasons for the reversals are still unknown." (Gallett and Valet, p. 100) None of the reversal theories can stand the test of close scrutiny by other AAOEC. Every theory of how the

[176] Radioisotopes are isotopes that are unstable and will decay into another element by one of several different decay processes (the process may be different in different isotopes).

reversal occurred is refuted by either empirical evidence (cf. p. 32) or by laws of science.

What Caused the Apparent Reversal of the Earth's Magnetic Field?

Before considering the most likely explanation of apparent reversals some other possibilities for these apparent reversals will be considered. Machel and Burton discuss both chemical and microbial processes that cause magnetic anomalies.

> It is apparent that anomalous magnetization can be produced in hydrocarbon seep environments chemically and bacterially. Anomalous magnetization may be positive, absent, or negative relative to the total magnetization of the surrounding rocks. (Machel and Burton, p. 604)

It is likely that these theories will be explored because of the proposal that this technique be used for prospecting for oil and natural gas. "Magnetic prospecting for hydrocarbons accumulations is a relatively new and little recognized field." (Machel and Burton, p. 598) Economic reasons will certainly drive geophysicists to explore this field more thoroughly in the future.

The magnetic field of the planet that caused the flood (Mercury) rotated as it aligned with the magnetic field of the Earth, and it moved through the Earth's crust as it circled the Earth during the 150 days of the flood. This would give the appearance of field reversals as can be seen in Figure 9 as the planet approached the Earth and Figure 10 as it revolved around the Earth.

Figure 9

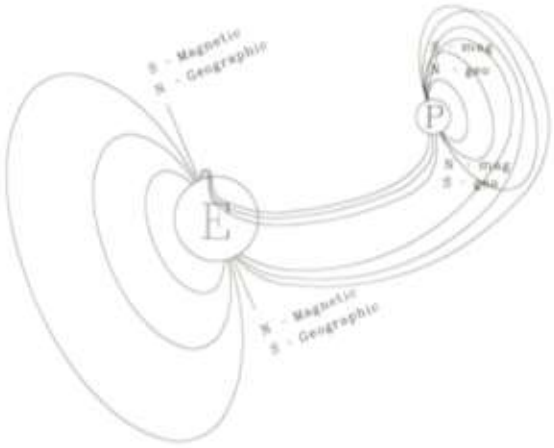
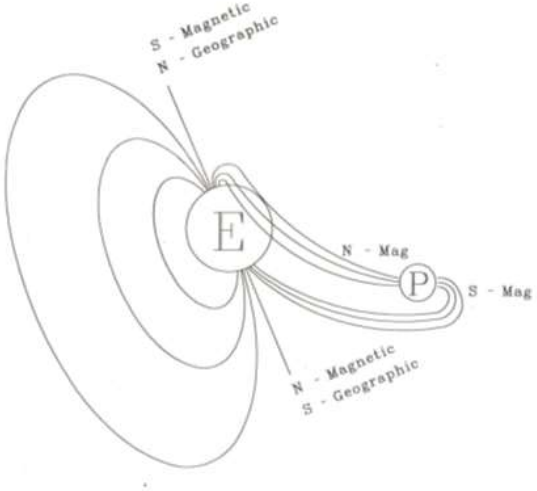


Figure 10



The most likely explanation of these apparent field reversals is that it may be a combination of these explanations. This would be a combination of the influence of the magnetic field of the planet that caused the flood and the chemical and microbial processes and perhaps other unknown processes.

Polar Wandering

The magnetic field of the Earth is moving at this very time (cf. the prior quote of Marion, p. 312). Hapgood claims the geographic pole of the Earth has moved because of some unknown mechanism.

> It is necessary to admit, in the first place, that at the present time there is no satisfactory explanation of the *modus operandi* of displacements of the lithosphere. The purpose of this book is simply to present the case for the assumption that such shifts have occurred and to show how the assumption explains numerous unsolved problems in geology and in the evolution of life. In addition, I present evidence dating the last three displacements and placing them in the latter part of the last geological epoch. (Hapgood, 1970, pp. 40-41)

Hapgood claims to have evidence of three polar displacements, precisely the number of passes that the planet that caused the flood probably made with the Earth.

Hapgood theorizes that the ice caps might have caused the Earth's angular momentum (cf. pp. 106-107) to change and shifted the Earth on its axis by displacing the lithosphere.

> Let us visualize briefly the effects of the displacement of the lithosphere. Here we will simply point to the fact that the oblateness of the earth involves the consequence that in any displacement of the lithosphere parts of the earth's surface will be under compression, and other under extension. This is because such a movement will displace some areas toward the poles, and others toward the equator. Areas moved poleward will be under compression, while those moved toward the equator will be stretched, with consequent widespread fissuring. The enormous force of the moving lithosphere would produce folding and strata in some areas and fissuring in others. (Hapgood, 1970, p. 38)

Large amounts of cosmic ice raining through the windows of heaven and deposited in an asymmetrical manner (first on the north pole then on the south pole) with respect to the

geographic poles on the polar regions (cf. Chapter 9, p. 116) would upset the angular momentum (cf. pp. 106-107) of the Earth and cause it to wobble on its axis like an automobile tire that is "out of balance." The Earth did wobble or totter on its axis during the flood. The Psalmist states:

> (Ps. 104:5-9, New American Standard Version) [5] He established the earth upon its foundations, So that it will not totter forever and ever. [6] Thou didst cover it with the deep as with a garment; The waters were standing above the mountains. [7] At Thy rebuke they fled; At the sound of Thy thunder they hurried away. [8] The mountains rose; the valleys sank down To the place which thou didst establish for them. [9] Thou didst set a boundary that they may not pass over; That they may not return to cover the earth.

There is a phenomenon called *Chandler's Wobble* that occurs at the present time on the Earth (Kerr, p. 710). If the present winds create the *Chandler wobble* (a movement of from 3 to 6 meters across, the flood could create a wobble of many miles during the flood.

The resulting forces on the crust of the Earth would cause extensive folding and fissuring of the crust of the Earth. Hapgood develops the mathematics of the physics involved in these processes. Hapgood quotes a letter written by Albert Einstein to him after reading the manuscript of his book, and discussion between Einstein, himself, and others, in which Einstein endorsed several parts of the theory of Hapgood (1970, pp. xiv-xv, 327-328, and 339-342). This author has done graduate work in the fields of electrical engineering, physics, and mathematics and is convinced that the mathematical development of the physics by Hapgood is correct.

There is another factor that could have caused the geographic poles to change positions. It is the impact of the rings of Mercury (upon the Earth, Mercury, and the Moon) during the flood. David E. Smith (pp. 1-14) claims that the impact of meteorites and asteroids changed the angular momentum of the Moon and changed the positions of the poles on the Moon. The impact of the rings of Mercury and debris (from the crust that was ejected) from the impact of the rings striking both

the Earth, Mercury, and the Moon during the flood would also cause both the Earth's, Mercury's and the Moon's geographic poles to move.

If the basic premise of this book is correct, the changes in the angular momentum of the Earth by both the deposition of the ice caps, the raising of the mountains (and erosion of the land), and the melting of the ice caps would cause the geographic poles to wander. In addition, the impacts of bolides upon the Earth would cause gravitational anomalies in the Earth. If the rings of Mercury had moonlets, these moonlets would cause gravitational anomalies – if they impacted the Earth. Gravitational anomalies would also affect the angular momentum of the Earth. Movements of the geographic poles would tend to change the seasons. The changes in the angular momentum would vary exponentially, not in a linear fashion. It is to be expected that in the years immediately after the flood there would be a greater amount of both volcanic and earthquake activity. The AAOEC has based his calculations of the age of things on the assumption that most volcanoes erupt in a periodic manner. They assume that the time between eruptions of each volcano is approximately the same (it is periodic – a uniformitarian assumption).

Volcanism and the Flood

If volcanoes were caused by the planet that caused the flood, there should be evidence of volcanic activity during the flood. There should be layers of sedimentary rock upon lava and lava upon sedimentary rock. There should be volcanic ash on layers of the sediment. If the flood was tidal in nature, parts of the Earth might have been covered with shallow water at the same times other parts were covered with deep water. This means that the ash could be intact, particularly in the areas that had shallow water. Erwin notes these very things: "Clay layers, apparently of volcanic origin, occur throughout the latest Permian Changxing formation and a particularly thick clay marks the basal Triassic." (p. 232) The Changxing formation is in China. There is abundant evidence in the sedimentary rocks of volcanic activity during the flood.

If this volcanism occurred during the flood (as well as after the flood), volcanic dust would be found in the ice that was deposited both during and after the flood.

> Sources of sulfate to the core site include a combination of volcanic activity, marine biogenic sources, and evaporite sources. Prominent volcanic events may be represented by some of the residuals in the series, but the overall importance of volcanic source sulfate is less than other sources in the recent record. (Mayewski, *et al.*, p. 196)

OBLATENESS OF THE EARTH

What is Oblateness?

Oblateness is the measure of the bulge at the equator of a spheroid. It is usually used to express the measure of the bulge of an astronomical body. The mathematical formula for oblateness (O_b) is: $O_b = (r_e - r_p)/r_e$, where r_e = the equatorial radius and r_p = the polar radius. An oblateness of 0 means the polar and equatorial radii are equal. An oblateness of 1 means the object is a disk with a thickness of 0 (*for practical purposes if the disk is very thin it will approach an oblateness of 1*). A perfect sphere has an oblateness of 0.

Oblateness of the Planets

David Smith (p. 444) gives the following information about the oblateness of the planets:

Table 4

Oblateness of the Planets

PLANET	OBLATENESS	PERIOD OF ROTATION
Mercury	0	59 days
Venus	0	243 days*
Earth	0.004	24 hours
Mars	0.009	24.6 hours
Jupiter	0.06	10 hours
Saturn	0.1	10.7 hours
Uranus	0.06	17.24 hours*
Neptune	0.02	16 hours
Pluto	Unknown	6.4 days

* retrograde rotation[177]

What Causes Planets to be Oblate?

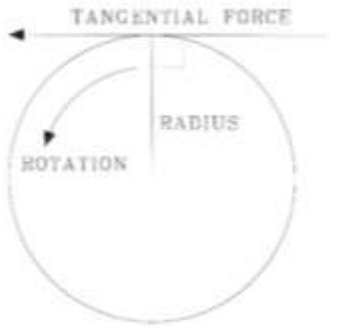
From the information provided by Smith (above) it is observed that the oblateness of the planet is inversely proportional to the period of rotation of the planet. This means that the oblateness of a planet increases with the speed of the rotation on its axis. The reader may notice that the oblateness of Saturn is greater than the oblateness of Jupiter, but Jupiter rotates faster on its axis than Saturn. The rigidity of the material of which the planet is composed also affects the oblateness of the planet. Since Saturn is less dense than Jupiter it has a greater oblateness. Mercury and Venus both rotate so slowly that their oblateness is 0 or approximately 0.

The spinning motion of the planet causes an uplift in the crust of the rotating object at the equator (assuming the equator is perpendicular to the axis of rotation). This has been incorrectly called a "centrifugal force."[178] The real force is in

[177] Retrograde motion is clockwise as observed from above the north pole.
[178] The reader should note that the effects are basically the same as if a centrifugal force actually existed.

the direction of a tangent line (tangent with the equator). The uplifting force is a vector force obtained from this tangential force (cf. Figure 11).

Figure 11



Changes in the Length of the Day

A number of AAOEC have claimed that the length of the day has changed in the past. The AAOEC usually extrapolates this change to prove that the Earth is quite old. Actually, they have assumed the age for the Earth and used linear extrapolation to determine how fast the Earth has slowed down in its rotation.

Sonett, *et al.* claim the length of the day on the Earth has lengthened from about 18 hours to our present value of 24 hours. They extrapolated the present rate backwards: "When the contribution to tidal friction from the sun is taken into account, these data imply that the length of the terrestrial day 900 million years ago was ~18 hours." (p. 100) Dott and Prothero state:

> Wells[179] began looking for diurnal[180] lines on fossil corals. He found several Devonian and Pennsylvanian[181] corals

[179] John Wells.
[180] Recurring every day.
[181] A period in uniformitarian geology in the Paleozoic era which supposedly

> that do show both annual and daily growth patterns. He was astonished to find that the Pennsylvanian forms had an average of 387 daily growth lines per year-cycle and that the Devonian corals had about 400 growth lines … Counting between annual marks, Wells found an average of 360 growth lines per year on modern coral.[182] He then constructed a graph … based on the latest isotopic dating[183] of the periods back to the beginning of the Cambrian, and this graph suggested a systematic decrease in the number of days per year through geologic time.
>
> In 1968 Panella and his associates, using many more organisms from Recent to Cambrian, showed that, while a systematic decrease is probably valid, their graph formed an S curve rather than a straight line. This S curve is probably caused by the different effects of tidal action accompanying the changes of continents, ocean basins, and epeiric seas. (p. 294)

It is possible that the "different effects of tidal action" created the different number of growth lines. The reader should note that the graph is an "S curve" which proves that linear extrapolation is invalid. Pannella, MacClintock, and Thompson attribute this "mainly to tidal dissipation in shallow seas." (p. 796) The question that needs to be answered is "when did these fossils grow?" If they grew during the year of the flood they might have a varying number of growth rings. This possibility is noted by the following quote of Scrutton:

> For counting the maximum number of ridges laid down, it is obviously most useful to study those corals which have led the least disturbed life, or those that have modified their direction of growth in a constant direction …
>
> The possibility must also be born in mind that if these fine growth-ridges are diurnal as it is claimed, unusual

---

began 320 million years ago. The AAOEC claims that the earliest reptiles evolved in this period.

[182] One wonders why he did not find 365 growth rings per year on modern corals. What would affect the number of rings and make it unequal to the days of the year?

[183] Radiometric dating (probably uranium-lead).

> circumstances may have caused an increment to be missing for certain days, or conversely, two increments to be deposited in the same day. (p. 553)

Disturbances during the flood would have upset the number of growth-ridges, because tidal effects affect the growth rate of coral (cf. Scrutton, p. 555).

Additional evidence comes from other sources. Stokes states:

> In addition to the more or less erratic changes that affect the earth's rotation, there is substantial evidence that the day is gradually getting longer. This lengthening is due to the gravitational pull of the moon on the earth's tides, which are steadily slowing the rate of rotation … In addition to the good theoretical reasons for suspecting this variation, there is fossil evidence that the year had about 400 days in the Devonian period about 400 million years ago. This is arrived at by counting minute "growth rings" in fossil corals; each ring supposedly represents a day's growth. The space of a year can be determined by noting seasonal variations in the size of the growth rings. (p. 15)

Smith agrees with the conclusions of Stokes:

> Studies of growth bands in bivalve shells and corals … have succeeded in proving that the number of days in a year has decreased from about 400 in Devonian times, … Furthermore the lunar month in the Devonian was 30.6 days long, compared with 29.5 days at present. (pp. 408-409)

There is no evidence that the period of the Earth's revolution around the Sun has changed in this time. Stokes states:

> The position of the earth in space can be checked by reference to other astronomical bodies, and the period of revolution has been found to be invariable during the period of instrumental observation. (p. 14)

(What Stokes is saying is that the Earth is not presently changing its orbital distance from the Sun. From this he concluded that it has not moved in the past.) This would mean that the length of a day in the antediluvian world was about 21.92 hours (in modern time). It is possible that the biological clocks (*circadian rhythm*) of some organisms are better tuned to this shorter day than to the present 24-hour day. Certainly,

the planet that caused the flood would have slowed the rotation of the Earth on its axis during the period of time that it caused the tides which brought about the flood.

In addition, it appears that the lunar month also changed (cf. Smith, p. 409 [*above*]). With the change in the length of both the month and the day (from 21.92 hours to our present 24 hours and the lunar month from 30.6 days to 29.5 days) the lunar month changed from 670 hours to 708 hours. These changes were probably brought about by the planet Mercury as its gravity pulled the Moon away from the Earth when it was moving toward its apogee.[184]

Pannella, MacClintock, and Thompson discuss both the reliability and precision of "information derived from paleontological clocks." (p. 792) They continue by saying:

> When dealing with fossils, however, difficulties arise. Poor preservation, ambiguity of growth patterns, and lack of modern representatives make the counts of growth increments highly subjective. In general, growth patterns record fewer increments than actual days. The gaps in the record, which are randomly controlled by the environment, affect the degree of precision of the information since there is no way to establish the ratio for each specimen. The degree of resolution required by geophysicists is higher than the precision obtainable from the paleontological-clock method when based on the few data so far gathered. (p. 792)

The counting of these growth increments is "highly subjective." Scrutton states: "it was found impossible to recognize yearly annulations[185] on the material examined." (p. 552)

Kahn and Pompea note that there is a discrepancy between the dating with corals and Nautilus shells.

> The only "long term" study (on a time scale of millions of years) is Wells' palaeontological study on daily and annual

[184] Apogee is the greatest distance from the Earth of an object that is orbiting the Earth.
[185] A ringlike anatomical structure.

> banding in corals, the results of which suggest a much slower lunar recession than the nautiloid data does. Although the existence of annual banding on corals is well established, there is some question about daily banding in modern corals. (p. 609)

They continue with a fairly extensive discussion of problems with the claims that corals have daily bands.

The catastrophic events of Genesis 6-9 would make the extrapolation of the present rate of increase in the length of the day for determining the age of the Earth to be invalid. Linear extrapolation assumes the variables are related in a linear manner. The extrapolation of the length of the day by linear extrapolation is flawed. The slowing of the Earth's rotational speed is caused by tidal friction, but tidal forces vary in a manner that is "inversely proportional to the *cube* of the distance" (Wolfson and Pasachoff, p. 221) between the astronomical bodies. The 18-hour day theorized by Sonett (p. 100) should be reduced considerably with the Earth rotating much faster than Sonett claims because it appears that he incorrectly used linear extrapolation rather than exponential extrapolation. In addition, it is possible that the antediluvian environment affected the growth rates of these organisms.

Effects of Changes in Oblateness

Any changes in oblateness of the Earth would create stresses on the crust of the Earth and could cause earthquakes. This would occur because of changes in isostasy (cf. pp. 175-176) which would occur as the rotation slowed. The equator would tend to sink into the magma and uplift other regions of the crust. The following mathematical formula expresses the change in the equatorial circumference:

> $\Delta c = 2\pi\Delta r$, where Δc = the change in the length of the circumference and Δr = the change in the length of the radius.

The circumference of the Earth would decrease by 6.28 (2π) miles for every 1 mile in decrease in the length of the radius (6.28 kilometers for every 1 kilometer).

At least three other possible effects could result from changes in the oblateness of the Earth. *First*, north-south mountain ranges would possibly be formed in the crust to allow the equatorial radius to decrease (e.g. the Andes Mountains). *Second*, east-west mountain ranges would possibly be formed in the crust to allow the polar radius to increase (e.g. the Himalayan Mountains). *Third*, if plates existed in the crust and the plates were tilted, one plate could possibly slide under the edge of another plate. The plate tectonics theory claims that plates have slid under the edges of other plates. These areas are called *subduction zones* by the advocates of plate tectonics. AAOEC claim these subduction zones are the mechanism by which sedimentary rocks are recycled.

Concluding Remarks

The correlation of things learned in prior Chapters from the Scriptures, facts of nature, and laws of science aid in understanding the probable causes of earthquakes and volcanoes. The most likely causes of both earthquakes and volcanoes are: (1) the interactions of the magnetic fields of the Earth and the planet that caused the flood and gravitational forces upon the equatorial bulge, (2) the deposition of sediment on the continents, (3) the elevation of the mountains, (4) the erosion caused by the flood, (5) and the deposition of the ice caps that changed the angular momentum (cf. pp. 106-107) of the Earth and still changes the angular momentum when these ice caps melt and/or icebergs break off the ice caps, and (6) decreases in the rotational speed of the Earth resulting from the tidal action of the flood that affected the oblateness of the Earth and created stresses on the crust of the Earth. All of these factors change the isostasy (cf. pp. 175-176) of the Earth and this constant adjustment of the isostasy creates the forces which cause both earthquakes and volcanoes.

MISCELLANEOUS FACTS ABOUT THE FLOOD AND ANTEDILUVIAN MAN

CHAPTER ELEVEN

Reasons for the Flood

Why would God send a flood and go to such elaborate ends to bring such things as: ice caps, earthquakes, volcanoes, and devastating storms? It was necessary to bring about a reduction in the length of life of mankind because man tends to become more wicked if punishment for sins is not speedily executed (Ecc. 8:11). Cf. Fox, 2024, Appendixes L and M for a more thorough development of this point.

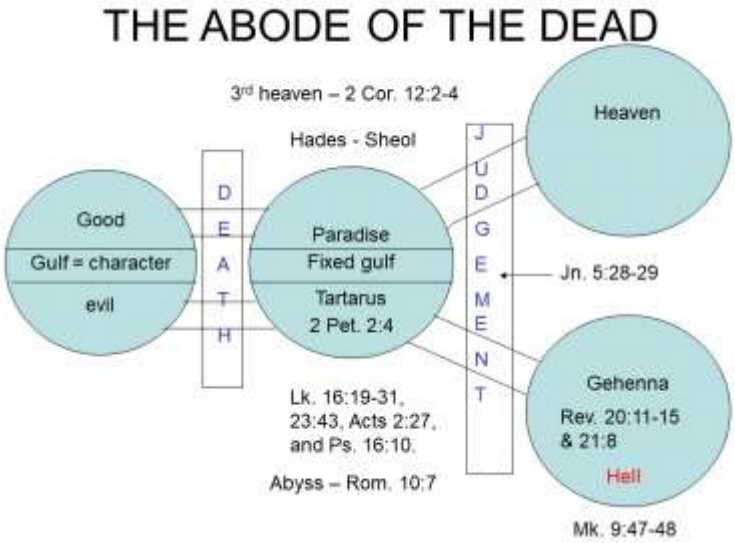
Also, God intended that the salvation of Noah by water (the water raised him above the destruction) should serve as a type of the salvation of the Christian (1 Pet. 3:21). Likewise, the destruction of the disobedient serves as a warning to those who would disobey God (1 Cor. 10:5-11, 2 Pet. 2:4-11, Jude 1:5-7).

Questions About Antediluvian Man and the Flood

The *first* question to be answered is: Where did Cain get his wife? Answer: Since Eve was the mother of all living (Gen. 3:20) she must have been the mother or grandmother of Cain's wife. Hence Cain married his sister or possibly a niece. Cain killed his brother Abel before the birth of Seth (Gen. 4:25-26). Adam was 130 years old when Seth was born and so it is possible that Adam and Eve had become grandparents many times over when Seth was born. It cannot be determined how old Adam was at the birth of Cain or how long it was before Cain married. Neither can it be proven that Cain was the first child born to Adam and Eve, as some teach. The absence of mutations allowed Cain to marry his sister or niece without having any problems with inbreeding. The only reason that marriage to a near relative is unwise is because of mutations (cf. pp. 6, 74, 85, 198, and 400).

The *second* question to be answered is: Where did the racial distinctions such as different hair colors, different skin colors, different eye colors, etc. come from? God created mankind as well as animals with a large number of genes that provide him and the animals with abilities to adapt to different environments. The dark-skinned people were able to survive better in the tropical regions of the Earth because of their skin pigmentation. The lighter-skinned people could survive better in the temperate or polar regions because of their lighter skin. There were six persons from which to draw the various racial characteristics: Shem, Ham, Japheth, and their wives (Gen. 9:18-19). Adaptation (microevolution cf. Appendix D and Fox, 2024, Appendix P) within this gene pool is probably accomplished by means of recessive genes. An excellent discussion of the racial distinctions is given by Bert Thompson (1990, pp. 33-36).

The *third* question to be answered is: How long did Noah work on the ark? Noah probably worked on the ark for about 100 years (Gen. 5:32 and 7:6). It is possible that the ark became a "center of attraction" during its construction and that Noah preached to the people during this time (1 Pet. 3:18-20 and 2 Pet. 2:5). Jesus preached through Noah while the ark was being prepared by inspiring Noah to preach. While Noah prepared the ark, he preached to those who were in prison at the time Peter wrote. The word "prison" is a figure of speech referring to the waiting place of the dead. This waiting place is called "Hades" (ᾅδης) in the Greek New Testament. Hades contains two parts, Tartarus (the abode of the wicked after death [τάρταρος]) and Paradise (the abode of the righteous after death [παράδεισος]). The waiting place of the dead will be destroyed at the second coming of the Lord (Rev. 20:13-14). These were in prison (Tartarus – Hades) because they had died in the flood and were wicked (Gen. 6:5-13). Jesus did not go to Hades to preach to them, but they were in Hades when Peter wrote verses 18-20 and Jesus preached through Noah while the ark was being prepared. Refer to the chart (below) for clarification of the abode of the dead.



The *fourth* question to be answered is: Were antediluvian men vegetarians? Some have theorized that man and all animals were vegetarians prior to the fall of Adam and Eve. This idea is derived from Gen. 1:29-30. This might be true, but it is apparent that they were not vegetarians after the fall of mankind. Gen. 1:30 simply states that the plants were designed to be food for animals and man, not that man only ate plants. Gen. 3:17-19 merely teaches that man would have problems growing his food. God granted permission for man to eat all kinds of flesh (Gen. 9:3). This permission was rescinded in Leviticus 11 for the descendants of Jacob (Children of Israel). Prior to the flood certain animals were clean and others were unclean (Gen. 7:2 and 8). God did prohibit eating of blood and meat which was not properly bled (Gen. 9:4). One additional fact suggests that man was probably not a vegetarian. Abel was a keeper of the flocks (Gen. 4:4) and this is a strong implication that he used the flock for more than the wool. It could hardly be called a sacrifice to offer to God something which you would not use (the meat). Noah did not sacrifice unclean meat to God (Gen. 8:20). David scorned the idea of sacrificing that which had cost him nothing (2 Sam. 24:24). One theory about why God allowed man to eat meat in Gen. 9:3 and thereafter is that the flood had diminished the fertility (proper nutrients) in the soil so that plants would not

provide all the nutrients that man needed in order to be healthy. For this reason, God allowed man to eat meat. In addition, the anatomy of man is designed to digest both plants and animals (meat). Man is an omnivore (he is designed to eat almost anything). If man was a vegetarian before the flood, did God change man's design after the flood or was man designed as an omnivore in anticipation of the flood? If Gen. 1:30 teaches that mankind were vegetarians, then it also teaches that all the animals were vegetarians before the flood or at least before the fall of man. It is claimed by some that when Adam was driven from the Garden of Eden he was separated from the trees of the Garden and was allowed to eat meat at this time. The claim is made by some that Adam was a vegetarian until the fall of man at which time animals were sacrificed to provide Adam and Eve with clothing (Gen. 3:21).

The *fifth* question to be answered is: Does it not require millions of years to account for over four billion persons on the Earth? The answer is a surprising no! In fact, with the present growth rate of the population of the world, one could start with two persons and have over four billion persons in about 1,000 years. The postdiluvian patriarchs lived several hundred years (Gen. 9:28; 11:10-32; 25:7; 35:28; 47:48; and 50:26). Because of their long lives they could have produced dozens of offspring each. The present population growth of the Earth approximately follows the math formula: $T = 50 \log_e (2)$. Where T is the approximate time for the population of the Earth to double. The approximate time to quadruple would follow the equation: $T = 50 \log_e (4)$. The approximate time to multiply by 500 would follow the equation: $T = 50 \log_e (500)$. It is evident that if the population of the Earth follows this formula, the present population of the Earth could be accounted for in about 1,000 years, after starting with two people. The population of the Earth is doubling every 35 years at the present rate of growth.

The *sixth* question to be answered is: How did Noah gather all the animals into the ark? God told Noah that the animals would come to him (Gen. 6:20, 7:7-9, and 7:13-16). This implies that God controlled them and caused them to migrate to the

ark at the proper time. The animals that entered the ark are those that God chose to save. Certainly, He chose the animals best suited for the postdiluvian environment.

The *seventh* question to be answered is: How did Noah feed all the animals during the year in the ark? God told Noah, "And take thou unto thee of all food that is eaten and gather it to thee; and it shall be for food for thee, and for them." (*the animals*, MRF – Gen. 6:21) This would have provided food for the animals until plants had grown sufficiently to feed the animals. It does not say the food was just to be eaten while they were in the ark, but it provided sustenance until the Earth provided by natural means. Plants were already growing before Noah left the ark (Gen. 8:11). If the animals bred during the year of the flood, they might have multiplied sufficiently to provide food for the predators. Carrion-eating animals would have large amounts of carrion to eat that was left by the flood waters. It is also possible that some of the animals either hibernated, went through torpor, estivated, or went through diapause during some of the period of the flood. All the mechanics of how the animals were fed by Noah and his sons are not set forth in Genesis, but they were provided for by the food he took into the ark. Some animals, such as rodents, can multiply quite rapidly and could have thousands of offspring in one year of time. Another example is the panda, which normally feeds on bamboo, but can eat meat. The panda does not hunt for meat because of the energy demanded by hunting. If the panda can easily find meat, it is carnivorous. These animals could multiply rapidly if they were as vigorous as the humans (Noah and his offspring). There is no doubt that the animals were vigorous and quite healthy. Arthropoda that were not on the ark could have hatched out and provided food for the animals that were on the ark. Meat that was frozen by the ice would have provided food for predators. The mechanics by which Noah and his family fed the animals during the flood is not stated in the Scriptures. No doubt the design of the ark facilitated their feeding the animals easily. For example, if the food was stored in the third story of the ark (Gen. 6:16), it could be brought down to the animals by means of chutes or other mechanisms. John Woodmorappe has an excellent

treatise that explains how this could have been done.

The *eighth* question to be answered is: What kept the predators from eating the other animals and humans during the flood? God told Noah to make rooms in the ark (Gen. 6:14) which might have been nests or cages (cf. the footnote ASV). The Hebrew word translated *rooms* (Gen. 6:14) is found 13 times in the Bible and is translated "nest(s)" in the other 12 times it is found. It seems evident that this refers to cages into which the animals entered and stayed during the flood. Since God sent the animals into the ark (cf. the answer to question 6 above), He also sent them into the cages.

The *ninth* question to be answered is: How did Noah design and build the ark? Noah prepared the ark by faith (Heb. 11:7). But faith comes from the message of the Word of God (Rom. 10:17). God evidently designed the ark and told Noah how to build the ark. The Greek word translated "prepared" κατασκευάζω (pronounced *kataskeuadzo*) means: "*to furnish, equip, prepare, make ready* … **b.** of builders, *to construct, erect* with the included idea *of adorning and equipping with all things necessary*" (Thayer, p. 336) God revealed to Noah all things that were necessary to accomplish the task that God gave him (Heb. 11:7 and 1 Pet. 3:20). God never requires of man what man is unable to accomplish without giving him aid so that he can accomplish the task that God requires.

The *tenth* question to be answered is: If AAOEC are wrong on their dating of the age of the Earth, how are they so successful in finding petroleum products? Under the heading "*Relative time scales*" Raup states:

> In spite of this problem, the system does work! The best evidence for this is that the mineral and petroleum industries around the world depend upon the use of fossils in dating. If an oil company learns that petroleum is found in buried reefs of Silurian age, for example, its geologists search for reefs of Silurian age elsewhere. It has been shown over and over again that by following this strategy, more petroleum will be found than if drilling is done on a random basis. (*Scientists confront creationism,* p. 153)

Raup is guilty of the *black-white fallacy*. His basic argument is:

> First Alternative: Either the geologist searches for petroleum/minerals in rocks that are dated by the AAOEC method, or he searches in a random fashion.
> Assertion: Searching in a random fashion is unproductive.
> Conclusion: The geologist must use the AAOEC dating system.

The mechanisms that trap oil/gas were merely formed by catastrophic means rather than uniformitarian means. There is nothing inherent in uniformitarian geology that makes it better adapted to finding petroleum than catastrophic geology. We must point out that most geologists have rejected uniformitarian geology. The traps, basins, etc. where petroleum is found are more readily explained by catastrophic geology than uniformitarian geology (cf. Chapter 13, p. 263). The formation of these mechanisms that store petroleum products is not unique to uniformitarian geology. The fossils that produced petroleum are found in formations that are incorrectly dated by uniformitarian geology, but there is nothing in the dating system that aids in finding the petroleum/minerals. The fact that petroleum geologists frequently drill dry holes[186] proves that their system is flawed. Long periods of time are not required to produce either coal or petroleum (cf. p. 54).

The *eleventh* question is: Why did not Noah take 6 female and 1 male clean animal into the ark instead of 3 pairs and 1 extra animal (probably a male)? Answer: By taking 3 pairs, it provided the postdiluvian world with more genetic diversity than would have occurred with 1 male and 6 females. In addition, Noah probably sacrificed one of the males after the flood (Gen. 8:20). It is possible that this male bred one or more of the females before it was sacrificed in order to preserve its genetic makeup. Another possible reason for several pairs was to enable the animals to spread out in different directions to repopulate the Earth.

[186] Wells that do not produce economic amounts of petroleum.

The *twelfth* question is: How did God preserve the genetic diversity of the antediluvian world? Some of the antediluvian genetic diversity was probably allowed to become extinct because it could not survive in the postdiluvian world. For example, some flying animals might have required the greater air density of the antediluvian atmosphere to fly and would not have been able to fly in the postdiluvian atmosphere. These variations of that "kind" would not have been sent by God into the ark. Graham discusses a number of animals that exist on the edge of extinction because of the limits of the oxygen level in the atmosphere and/or the aquatic environment in which they live (1988, pp. 1031-1045). Another possibility is that the female animals that entered the ark were pregnant by a male animal that did not come into the ark. Some animals can have multiple births and be pregnant by more than one male. This would preserve the genetic diversity of the male that bred the female before the flood but died in the flood. There are probably other answers that this author has not considered.

The *thirteenth* question is: How did Noah dispose of the waste products produced by the animals on the ark? Answer: God made animals that recycle the waste products of other animals. The manure of animals is eaten by other animals and by some plants. These animals are of many sorts, insects, birds, etc. Most of the manure of large animals is undigested food and many animals recycle this food. God designed the ark so that the waste products would be recycled throughout the year of the flood. Extensive research has been conducted for several years that recycles animal wastes as food for animals (cf. Anonymous #13, C & E News, p. 15). There are swine-feeding operations that recycle the waste products of swine and very little is lost. The Earth is a huge recycling system, and the ark was a microcosm of the Earth; and it certainly recycled waste products in the same manner as the Earth.

The *fourteenth* question is: What kind of wood is gopher wood (Gen. 6:14)? The word *gopher* is not defined by the Scriptures, since it is only found in Gen. 6:14. In fact, this word is a

transliteration[187] of the Hebrew word. This author has heard some claim the Hebrew word גפר "gopher" means "laminated," but there was no documentation for this definition given to this author. The word translated "gopher" means: "wood of which the ark was made … hence 'pitch-wood, resinous wood'" (Brown, *et al.*, p. 172) This word is transliterated "gopher wood" (KJV, ASV, NASB, and NKJV); it is translated "cypress wood" (NIV and NRSV). The NIV and NRSV have a footnote saying the meaning of the Hebrew is unclear or uncertain. While "cypress" is a possible translation, this author thinks the translators of the NIV and NRSV may be guilty of mistranslation. I would opt for teak wood.

The *fifteenth* question is: How long does it take for a glacier to move from the interior of a continent to the ocean? Specifically, how long does it take, or did it take for glaciers to move from the interior of Canada to the ocean? AAOEC claim it took several hundred thousand years for the glaciers to creep off the continents.

> Photos taken by airplane on July 10 and September 10 show the advance of the glacier's terminus, which moved forward more than 1,500 meters (*4,921 feet – MRF*) in about three weeks. (Anonymous #14, Science News, p. 333)

Glaciers in Antarctica have been found to be moving rapidly "ice on these glaciers is so fast moving (about 600 yards a year [*549 meters – MRF*])." (Tyree, p. 295) A movement of 600 yards each year would move these glaciers over 1,500 miles [over 2,400 kilometers] since the flood. Glaciers can move very fast from one location to another. If the glacier moved from the interior of a continent, the interior would rise to restore isostasy (cf. pp. 175-176). Any rising of the center of the continent would tend to cause the glaciers to move away from the center of the continent and would accelerate the glacier toward the oceans.

The *sixteenth* question is: Were there seasons prior to the flood? God placed the Sun, Moon, and the stars to "be for signs,

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[187] Transliteration is where the letters of one language (Hebrew in this instance) are replaced by letters of another language (English in this instance) with the same or similar sounds.

and for seasons, and for days and years." (Gen. 1:14) God promised that "while the earth remaineth, seedtime and harvest, and cold and heat, and summer and winter, and day and night shall not cease." (Gen. 8:22) Additional evidence of seasons prior to the flood is in the petrified wood that predates the flood. Petrified wood has rings that are what one expects in wood that has growth rings which usually come from seasons. Other evidence is provided by Stokes:

> Freshwater clams usually show annual rings that are much like tree-rings. A dark, narrow zone marks the colder season when little or no new material is added to the shell; a wider band of lighter color indicates the season when food is abundant. The seasonal nature of these variations has been proved by cutting small notches in the shells of living clams and noting how and when new shell material is added. Comparisons between fossil specimens and their modern counterparts show that seasonal effects were operating on water-living animals far back in time. (p. 17)

Therefore, it seems evident that seasons existed before the flood.

The *seventeenth* question is: Have they found the ark? Several persons claim to have found the ark. These claim to have found it in different locations and under different conditions. It is evident that no more than one of these who claim to have found the ark can be right if they claim to have found it in different locations. It is logically possible that none of them have found the ark. In the judgment of this author, it is unlikely that the ark has been found. It is likely that God brought about the destruction of the ark in order to prevent the worship of it as some "holy artifact." This is precisely what happened to the brazen serpent (Num. 21:8-9 and 2 Kgs. 18:4). They did not understand the real significance of the brazen serpent (Jn. 3:14-15).

The *eighteenth* question is: Did Methuselah die in the flood? Methuselah died the same year as the flood (Gen. 5:25-27 and 7:11). Since the flood began "in the second month, on the seventeenth day of the month," he apparently died the same year of the flood. This author does not see how anyone can say

that Methuselah was wicked because he died in the flood; this is pure assumption – *begging the question*.

The *nineteenth* question is: Are there not more fossils in the sedimentary rocks than could have lived at one time? The fertility and amount of oxygen available for antediluvian animals greatly enhanced both the size and number of animals. With regard to marine animals, Graham, *et al.* (1995) state:

> Beyond this, global atmospheric hyperoxia[188] would have reduced the limitation of seasonal aquatic hypoxia,[189] favoured infaunal penetration of marine sediments, allowed denser aggregations, and increased body size of some groups. (p. 119)

This point was discussed extensively in Chapter 6 (cf. p. 60). Most of the fossils are marine plants and animals. The reader should remember that marine environments are essentially three-dimensional. Marine organisms can live in the sediment, on the bottom, near the bottom and at all depths of the water. The density of organisms of the antediluvian oceans were surely greater than postdiluvian oceans. Postdiluvian density is quite high in some locations:

> … in the La Jolla submarine canyon, off the California coast. Recent studies of the canyon revealed it to be the most densely populated place ever described in the scientific literature: more than three million individual animals per square meter (Anonymous #15, *Sea Frontiers*, p. 19)

If three million individual animals can live in one square meter of postdiluvian ocean space, then many times more than that could have lived in one square meter of the antediluvian oceans. The tallest trees in the world are over 300 feet (over 100 meters) tall. In antediluvian times forests existed in the arctic region which were over 90 feet tall (cf. pp. 68, 124 146, and 159). If extensive forests with very large trees existed in the antediluvian world, they would support larger numbers of animals per unit of area than the postdiluvian world. Animals tend to live underground (in burrows) and in all levels of the

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[188] Elevated oxygen levels.
[189] Lowered oxygen levels.

forests which explains why dense forests have large numbers of animals.

The *twentieth* question is: Were antediluvian men a bunch of ignorant savages? It is evident that they were sinful, which could include savagery (Gen. 6:5 and 6:12-13). They were certainly not ignorant. They domesticated animals (Gen. 4:20), invented musical instruments (Gen. 4:21), and learned how to process metals (Gen. 4:22). If antediluvian mankind lived over 900 years, they must have been quite vigorous. In all likelihood antediluvian man was quite intelligent. It is possible that they were quite advanced technologically.

The *twenty-first* question regarding the flood is: "How could the ark be loaded with Noah, his family, and all the animals in one day?" Keil and Delitzsch state:

> Ver. 13. "*In the self-same day had Noah … entered into the ark*:" … pluperfect "*had co*me," not *came*, which would require … The idea is not that Noah, with his family and all the animals, entered the ark on the very day on which the rain began, but that on that day he had entered, had completed the entering, which occupied the seven days between the giving of the command (ver. 4) and the commencement of the flood (ver. 10). (p. 145)

AAOEC have asked a number of questions regarding the ark and how Noah managed the ark during the year of the flood. Questions such as: "how did parasites survive during the flood without killing their hosts?" or "how can a 450 foot (137 meters) long wooden boat float since modern ship engineers have not been able to build one longer than about 300 feet?" have been asked by AAOEC. These AAOEC have assumed that the God who created the whole Universe is unable to provide means to accomplish His will. Their whole line of argumentation *begs the question*[190] that God does not exist. They assume that modern engineers have tested every possible mechanism for ship building with wooden materials and also that modern wood is the same as antediluvian wood.

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[190] This is the fallacy of assuming what one is trying to prove or assuming a *necessary condition* (cf. p. 15 and Fox, 2024) in the proof.

Another question is "did these engineers test a ship with the shape, dimensions, made with gopher wood like the ark?" They are guilty of the fallacy of *denying the antecedent* (cf. p. 45-46 and Fox 2024) in this whole line of argumentation. Their argument is of the form:

> First Premise: If Christians can answer question X, then question X has an answer. (This is axiomatic.)
> Second Premise: Christians cannot answer question X.
> Conclusion: Therefore, question X does not have an answer.

He has made the following argument (an enthymeme):

> Major Premise: All A are B.
> Minor Premise: The theistic model is a model which fails to explain phenomenon X.
> Conclusion: The theistic model is a model that is unsound.

This categorical syllogism is an enthymeme[191] with the major premise omitted. The major premise demanded by the minor premise and conclusion is: All models which fail to explain phenomenon X are models that are unsound. The following argument proves the AAOEC is irrational:

> Major Premise: All models which fail to explain phenomenon X are models that are unsound.
> Minor Premise: The AAOEC model is a model which fails to explain phenomenon X.
> Conclusion: The AAOEC model is a model that is unsound.

The AAOEC has committed the fallacy of *special pleading* (cf. Footnote 104 p. 104). The AAOEC has not set forth a theory that explains all the facts (as evidenced by the fact that AAOEC disagree among themselves) yet he basically argues that the failure of some theist model to explain all the facts proves that no sound theistic model can be constructed. This demonstrates that some AAOEC are either irrational or dishonest or perhaps both irrational and dishonest (cf. pp. 307-324 and Appendix E).

The atheist, Robert J. Schadewald, wrote:

> Humankind is the only known "reservoir" for numerous communicable diseases. That is, the germs or viruses which

[191] An incomplete argument with enough information to reconstruct the whole argument.

> cause these diseases can survive only in living human bodies or well-equipped laboratories. Well-known examples include measles, pneumococcal pneumonia, leprosy, typhus, typhoid fever, small pox, poliomyelitis, syphilis, and gonorrhea. (p. 16)

Schadewald commits the logical fallacy of *denying the antecedent*. Here is his implicit argument:

> First Premise: If a creationist can explain how diseases that are only found in humans could have gone on the ark without wiping out Noah and his family, then there is an explanation of how this could have occurred.
>
> Second Premise: A creationist cannot explain how diseases that are only found in humans could have gone on the ark without wiping out Noah and his family.
>
> Conclusion: There is not an explanation of how this could have occurred. (This is also an *appeal to ignorance*.)

Of course, Schadewald is committing the fallacy of *denying the antecedent*; therefore, his argument proves nothing.

The hyperbaric conditions of the antediluvian world probably prevented these diseases from harming humans as they do now. It is possible that some of these diseases are from sinful activities – such as having sexual relations with animals (bestiality). Some of these diseases might have come from eating certain animals without properly cooking them. Genetic mutations (caused by the loss of the water vapor canopy) might have caused some of these organisms to become mutated and begin to harm humans. The loss of the hyperbaric conditions might have caused some of these organisms to become harmful to humans when they had not been harmful under hyperbaric conditions. These organisms go through the Pasteur – point and begin to produce toxins. There might be other explanations for these diseases.[192]

Schadewald gave away his whole argument when he wrote: "… or well-equipped laboratories." (p. 16) He admitted here that these organisms could survive outside the human body (if the conditions were right). It is reasonable that antediluvian

[192] I, Marion R. Fox do not claim that these are the only possible explanations of this objection.

conditions (super-fertile soil and hyperbaric atmospheric conditions) would be conducive to these organisms surviving.

Schadewald – being an atheist – must assume that humans evolved from macroevolution. How did these first two humans survive since (from his own reasoning) they should have been filled with parasites, harmful bacteria, harmful viruses, etc.?

Lorence G. Collins (p. 1) wrote:

> The stair-stepped appearance of erosion of sedimentary rocks in the Grand Canyon with sandstones and limestones forming cliffs and shales forming gentle slopes cannot happen if all these rocks were deposited in less than one year. If the Grand Canyon had been carved soon after these rocks were deposited by a worldwide flood, they would not have had time to harden into solid rock and would have been saturated with water. Therefore, the sandstones and limestones would have slumped during the carving of the canyon and would not have formed cliffs. (Hill et al. 2016)

We will consider evidence that the Grand Canyon was cut hundreds of years after the flood later in this treatise.

Lorence G. Collins wrote:

> Salt and gypsum deposits, more than 200 feet thick, occur in the Paradox Formation in Utah just 200 miles north of the Grand Canyon, and these deposits are the same age as the Supai rocks in the Grand Canyon that were supposedly also deposited by Noah's flood. Similar salt deposits, up to 3,000 feet thick, exist in various places on all continents and in layers of all geologic ages, and these deposits can only be produced by evaporation of sea water. Such evaporation could not have happened in repeated intervals in the midst of the 40 days and 40 nights of raining and during the supposed continuous deposition of sedimentary rocks by a worldwide flood and in which the only drying and evaporation is said to have occurred at the end of the flood. (p. 2)

Collins did not use the flood model that I set forth (earlier in this volume). He obviously dated the rocks by uniformitarian

geologic assumptions when he wrote: "… these deposits are the same age as the Supai rocks in the Grand Canyon…" There was time for drying with the winds that occurred during the times between the various tidal inflows and outflows.

The basic argument by Collins is:

> First Premise: If a Christian can explain how gypsum, salt, etc. were deposited by the flood, then there is an explanation from the flood for this deposition.
> Second Premise: A Christian cannot explain how gypsum, salt, etc. were deposited by the flood.
> Conclusion: There is not an explanation from the flood for this deposition.

Of course, this argument contains the logical fallacy of *denying the antecedent*. Since it contains a logical fallacy, it does not prove that there is no explanation from a flood model. The changes in the barometric pressure during the flood might have precipitated out the minerals (gypsum, salt, etc.) from the water at different barometric pressures.

Collins wrote:

> Sand dunes with giant cross bedding occur in the Mesozoic rocks in Zion National Park and are further evidence that desert conditions occurred at the time of the supposed flood. (p. 2)

Collins does not consider the Fox flood model that has tidal actions and winds during the flood. After the forty days of rain ceased, the winds continued and produced sand dunes at low tides.

Collins argued for mud cracks not being consistent with the flood model that he considered (pp. 2-3). Mudstones must be deposited rapidly (Bourgeois *et al.*, p. 569 – quoted on p. 360). The Fox flood model explains the mud cracks.

Collins wrote:

> Raindrop prints occur in many places around the world which could not have been formed or preserved if the muds (now in shales) containing these prints were deposited

under water during Noah's flood. (p. 3)

The Fox flood model is consistent with raindrop prints in the rocks, if the shale were deposited after the forty days of rainfall ceased. Tides rise and fall – uncovering some land.

Collins wrote:

> Nests of dinosaur eggs are found in several places around the world, and it is illogical that dinosaurs could have had enough time to create these nests and lay their eggs while they were fleeing from rising waters to reach higher ground. (p. 3)

Collins does not consider a tidal flood, and his arguments are based upon false assumptions. He assumes that the waters rose slowly, but tidal actions would have been fairly rapid.

Collins wrote:

> The White Cliffs of Dover on the eastern coast of England consist of chalk layers, up to more than 350 feet thick, that are composed of fossilized coccoliths (a kind of algae), and these layers are the same age as the sedimentary rocks that overlie giant cross-bedded sandstones in Zion National Park, and therefore, they were supposedly also deposited by Noah's flood. But coccoliths are very tiny and have chloroplasts that require sunlight and must float close to the ocean surface to get energy from the sun. Because of this fact, all of them could not have been living at the same time to depths of 350 feet in the one year in which the flood is said to have occurred because that many organisms in the water at the same time would have blocked out the sun from organisms below the near-surface. (pp. 3-4)

Again, the Fox flood model is consistent with this fact. Tidal actions could sort out these creatures and deposit them in certain locations – the waters acting like a centrifuge.

Collins wrote:

> None of the sedimentary rocks in the Grand Canyon contains fossilized pollen grains that are produced by grasses, pines, and flowering trees and plants whereas these same rocks in the canyon contain only spores of

> algae, ferns, moss, and fungi. A worldwide flood would be expected to mix these tiny structures if all were alive at the same time of Noah's flood, and this mixing did not occur. How can a rush of water in a tsunami sort out and separate such tiny reproductive structures from each other? (p. 6)

Here again, Collins does not consider the Fox flood model. His argument is:

> First Premise: If we have found certain fossilized pollen grains, then the plants from which these pollens were derived existed during the time of the deposition of the rocks.
>
> Second Premise: We have not found certain fossilized pollen grains.
>
> Conclusion: The plants from which these pollens were derived did not exist during the time of the deposition of the rocks.

Of course, Collins commits the logical fallacy of *denying the antecedent*. Collins fails to acknowledge that scientists have not even examined an infinitesimal part of the rocks.

Since grass has been found in fossilized dinosaur dung; Collins is wrong in his claim. This is evidence that the grass existed; therefore, if they have not found the grass pollen, this is not proof that grass did not exist. Note the links showing the presence of grass in fossilized dinosaur dung (coprolites):

https://www.indefenseofplants.com/blog/2019/9/27/history-of-grass-evolution-written-in-dinosaur-poop

https://www.livescience.com/3912-dung-reveals-dinosaurs-ate-grass.html

https://www.nature.com/articles/news051114-13

https://www.newscientist.com/article/dn8336-fossil-dung-reveals-dinosaurs-did-graze-grass/

Collins wrote:

> Abundant fusain (charcoal) is found in several different

> sedimentary rocks around the world that were supposedly deposited by Noah's flood, which is good evidence that a worldwide flood never happened. Fires that burn forests are not likely to occur in the midst of 40 days and 40 nights of rain. (p. 7)

This charcoal will be dealt with in a later section of this volume – Chapter 15.

In his attacks upon the Whitcomb-Morris flood model, he misrepresents this model with his claims that it amounts to a tsunami. Therefore, he is either ignorant of the Whitcomb-Morris model (this makes him to be unqualified to critique it) or he is dishonest (this makes him unworthy of critiquing it).

Collins wrote:

> The coarsely crystalline Zoraster granite occurs in the Vishnu schist in the bottom of the Grand Canyon. Experimental work shows that coarse crystals in granite are formed only at depths of 5 miles (or more) in the earth's crust and that at these depths, the rate of cooling of rock melts (magma) at temperatures of more than 800 degrees Centigrade require at least 5 million years before temperatures are low enough that crystals can start to form and slowly increase in size. Therefore, the age of the earth must be more than 6,000 years and much older than when Noah's flood supposedly occurred. (p. 8)

Collins repeatedly chides theists with claims that they should verify their hypotheses by experiments. But this claim (and most of his other claims) was not verified by experimentation – an experiment requiring 5 million years. He assumed that these rocks were not formed at Creation. Collins repeatedly resorts to uniformitarian assumptions in his argumentation.

Collins wrote:

> The rate of erosion of the Zoraster granite in the floor of Colorado River in Grand Canyon, as measured by how fast the erosion occurs on a yearly basis from year to year, is about a thousandth of an inch per year. This means that the carving of the Grand Canyon took millions of years – not in less than a year in a sudden rush of water draining

from three lakes at the end of Noah's flood. (p. 8)

Collins might be referring to the *Grand Canyon Spillover Theory*. The Grand Canyon Spillover Theory has Lake Bidahochi causing the Grand Canyon. Lake Bidahochi was probably a fluvial lake. Note how Collins resorts to uniformitarian assumptions to argue against this theory.

Collins wrote (p. 8):

> Scientific observations and measurements show that the canyon of the Colorado River was eroded by rates of 80 to 458 meters per million years at different places along the canyon.

Of course, neither Collins nor any other scientist made any "scientific observations" that lasted for a million years. They simply made uniformitarian assumptions and extrapolated (by linear extrapolation) these assumptions back in time.

Collins wrote:

> An experiment has been done by Charles Munroe III (an engineer) that shows that the submergence of an olive tree under water for more than 3 months kills the tree. … On that basis, when a dove brought an olive twig with fresh leaves to Noah on the ark (Genesis 8:11), the whole world cannot have been submerged under water during the flood. Otherwise, all olive trees would have been killed in 6 months of their submergence under the flood waters. Therefore, the flood must have been local in southern Mesopotamia with some land (say 100 feet above water) was present on which olive trees must have been growing and from which an olive tree with such a twig with fresh leaves could have been obtained by the dove. (pp. 9-10)

Collins implicitly admits that there was a flood – he just assumes it to be a local flood. This is an interesting admission by an AAOEC. There is no doubt that the olive tree was floating on the water and stuck in the soil as the water decreased. Munroe's experiment does not replicate the flood conditions of any universal flood model of which I am aware. It is well-known that an olive tree can grow from a cutting or a branch.

Collins wrote:

> If the sedimentary rocks in the Grand Canyon were all deposited by Noah's worldwide flood, then these rocks should all be deposited in less than one year under water and show continuous deposition from one formation to the next up the canyon walls without disruption. But that is not the case. For 12 example, (1) the Redwall limestone formation has ancient karst topography with caves and sinkholes, indicating that this formation was once lifted out of the water so that percolating rain water could dissolve out cavities and tunnels in the limestone, and (2) erosion channels of the Temple Butte Formation, as much as 100 feet deep, cut the top of the Muav limestone and networks of channels of the Surprise Canyon Formation, up to ½ mile wide and 400 feet deep, cut the top of the Redwall limestone, indicating that these rocks were exposed at the earth's surface to river erosion. (Hill et al. 2016) These structural land surface features would take much more than one year to be formed. (pp. 11-12)

There is no problem with these objections with the Fox Flood Model because it hypothesizes a tidal flood, and this would answer these objections. The Fox Flood Model has the Grand Canyon being cut by a fluvial lake or by several fluvial lakes after the flood. Similar geologic formations were formed by the flood from Lake Missoula and Lake Bonneville.

Fluvial Lakes

There were several fluvial lakes that shaped the landscape of the various continents. North America was shaped by several fluvial lakes.

Are There Gaps in the Genealogies?

Some people assert that large gaps exist between the genealogies of Gen. 11:10-32. Abraham was 86 years old when Ishmael was born (Gen. 16:15-16). Ishmael was 137 years old when he died (Gen. 25:17). Abraham was 100 years old when Isaac was born (Gen. 21:5). Isaac was 180 years old when he died (Gen. 35:28). Isaac was 60 years old when Jacob was born

(Gen. 25:26). Jacob was 147 years old when he died (Gen. 47:28). Levi was 137 years old when he died (Ex. 6:16). Joseph was 110 years old when he died (Gen. 50:26). Kohath was 133 years old when he died (Ex. 6:18). Amram – the father of Aaron and Moses – (not the Amram of Ex. 6:18)[193] was 137 years old when he died (Ex. 6:20). Aaron was 123 years old when he died (Num. 33:29). Moses was 120 years old when he died (Deut. 34:7).[194] Aaron was three years older than Moses (Ex. 7:7). Moses was 80 and Aaron was 83 at the time of the exodus (Ex. 7:7). Joshua was 110 years old when he died (Josh. 24:29). The children of Israel wandered for 40 years in the wilderness (Num. 14:34). The exodus occurred 480 years before the fourth year of Solomon's reign (1 Kgs. 6:1). Solomon probably reigned between 970 and 931 BC. The fourth year of his reign would be 966 BC. This makes the exodus to occur in 1446 BC. Since Moses was 80 at the exodus (Ex. 7:7), this puts his birth at 1526 BC and Aaron's birth at 1529 BC. This puts the time of Moses' death at 1406 BC and Aaron's death at 1406 BC.

Joseph was 30 years old when he went before Pharaoh (Gen. 41:46). There were 7 years of plenty and 2 years into the 7 years of famine (Gen. 41:53-54) Joseph's brothers came and Joseph sent for Jacob 2 years into the famine (Gen. 45:6). This makes Joseph to be 39 years old when Jacob comes to Egypt. Joseph presents Jacob to Pharoah upon his arrival in Egypt (Gen. 47:8-9) and Jacob told Pharoah that he was 130 years old. This means that Jacob was 91 years old when Joseph was born. It was not long after Joseph's birth that Jacob sought to return to Canaan (Gen. 30:25). There appears to be some time (probably a short period) after this that Jacob returns to Canaan – I am assuming that Joseph was 1 year old when they journeyed to Canaan.

Jacob served Laban 20 years (Gen. 31:41). If Reuben was born at the end of the first year, he was 19 years old when Jacob returned to Canaan. Since women who nurse a baby do not normally ovulate (Chao), it is not likely that Leah became

[193] Num. 3:27-28 shows that these are not the same person.
[194] Moses did not die of natural causes.

pregnant until she weaned her babies. This would space her babies about 2 (perhaps a bit more) years apart. Simeon would have been 17 and Levi would have been 15 years old when they journeyed to Canaan. This means that Levi was about 14 years older than Joseph (Jacob was 77 when Levi was born). After Leah had her fourth son (Judah), there was a period where she did not have any children – perhaps no sons (a gap [Gen. 29:35 and 30:9]) and then she had two more sons (Issachar etc.) and a daughter (Dinah). If we space Leah's children 2 years apart and make the gap to be 4 years,[195] this makes Dinah's birth to be about 18 years after Jacob marries Leah. Joseph was apparently born after this time.

While I consider Jacob's age at the birth of Levi (77) to be sufficiently precise not to introduce any appreciable error into the regression calculations, I will make some assumptions about the age of Levi when Kohath was born. Kohath was born at least 2 years before they came into Egypt (Gen. 46:11) when Jacob was 128 years old, and Levi was 51 years old. I will assume that Levi was 40 when Kohath was born. I will also assume that Amram was 55 when Aaron was born, this will date the birth of Amram at 1584 BC (Moses' sister [assumed to be Miriam] was probably about 16 years old when Moses was born [Ex. 2:8]). His sister is called a *maid* (עלמה – Strong's #H5959 – pronounced *almah*) in Ex. 2:8. *Almah* is defined as: "a young woman (ripe sexually; maid or newly married) …" (BDBG, p. 761).

The Children of Israel were in Egypt 430 years (Ex. 12:40-41) or in rounded numbers 400 years (Gen. 15:13). Rohl argues from Judges 11:26 that this 430-year period of time is correct (p. 117). Since the exodus was in 1446 BC, they entered Egypt in 1876 BC. This means that Jacob died in 1859 BC. This dates the flood at 2458 BC. (In round numbers [the ages of people in the Scriptures were all rounded numbers {Rom. 4:19, Lk. 3:23, and 8:42}][196] taking into account some of my assumptions I

[195] It is possible that another unnamed daughter was born during this period.

[196] If their ages were all given (as in the United States) from their last birthday, we could (on average) add ½ year to their ages. This would add

would date the flood (from *The Masoretic Text*) at about 2460 BC [cf. Appendix A].) I would date the flood at about 3218 BC from the LXX (cf. Appendixes A and B).

This brings us to Joshua. Joshua was 110 years old when he died (Josh. 24:29). Under *The Law of Moses,* a young man did not go to war until he was 20 years old (Num. 1:3); therefore, Joshua was over 20 years old when they came out of Egypt. Joshua was one of the twelve spies that went into the land of Canaan (Num. 13:1-16). Each of the spies was a prince and a leader of his tribe (Num. 13:2-3). I am assuming that Joshua was 40 years old when he came out of Egypt. This puts his birth at 1490 BC. This fits quite well with the age of Caleb (the other faithful spy). Caleb was 40 years old when he was sent to spy out the land of Canaan (Josh. 14:7). Joshua 14:10 was five years after they entered Canaan. This fits well with my assumed age for Joshua.

This brings us to the last person to be factored in our regression calculations (David). The fourth year of Solomon's reign was 966 BC (1 Kgs. 6:1). David was 70 when he died (2 Sam. 5:4). If David and Solomon served as co-regents for 2 years (1 Kgs. 1:43), David was born in 1038 BC and died in 968 BC.

In the graph of the longevity of the postdiluvian patriarchs (Graph 1) it is evident that the graph plotted closely approximates a decaying base e exponential function. If the basic premise of this treatise is correct, the number of mutations in the human body would build up at an exponential rate after the flood. This would reach a saturation level (equilibrium) and the longevity of mankind would in turn stabilize. This is what has occurred, the life of man is threescore and ten (70 years) or perhaps fourscore (80 years, Ps. 90:10). This probably occurred about the time of David.

Table 5 (below) gives the ages of some of the postdiluvian patriarchs at the birth of their sons who were in the lineage of

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about 8 years to the date of the flood (my calculated value 2462 + 8 = 2470 years ≈ 2500 BC from *The Masoretic Text*).

Abraham and their age at their death.

Four of the people in this table are aberrations. Joseph spent 13 years total as either a slave or in prison. His being sold into slavery at the age of 17 certainly had to be stressful. His time in prison certainly took a toll on his health. His older brother Levi outlived him by 27 years.

On the other hand, Isaac lived longer than we would expect from the data. Sarah was past the age of child-bearing (Gen. 18:11 and Rom. 4:19). Women begin life with a fixed number of eggs and – as the woman ages – her eggs begin to be more likely to have abnormalities in them. It is obvious that God miraculously enabled Sarah to ovulate. Since God always restored people whole when they were healed (cf. 2 Kgs. 5:14, Mt. 12:13, etc.), Sarah's eggs were probably restored to what they had been when she was a young woman (Heb. 11:11). It is possible that Abraham's sperm was also restored whole. This would explain Isaac's longevity.

Ishmael does not fit the pattern – he died sooner than expected. Hagar was probably about 60 years younger than Sarah and Sarah's eggs were probably restored and Abraham's sperm was possibly restored (cf. the paragraph above) – after Ishmael was conceived.

We do not have any idea why Nahor's longevity was so short. In doing research we must deal with the data that we have. I did not recalculate this regression based upon "what might have been," but upon what happened. In other parts of this book, I cited scientists who admitted that they inserted data that did not exist into their calculations. I did make some assumptions in these matters (when Amram was born, when Joshua was born, and the time of Solomon's reign), but I did not go back and redo these assumptions in order to get a better value for r. What we are dealing with here is not errors, but the precision of these three matters.

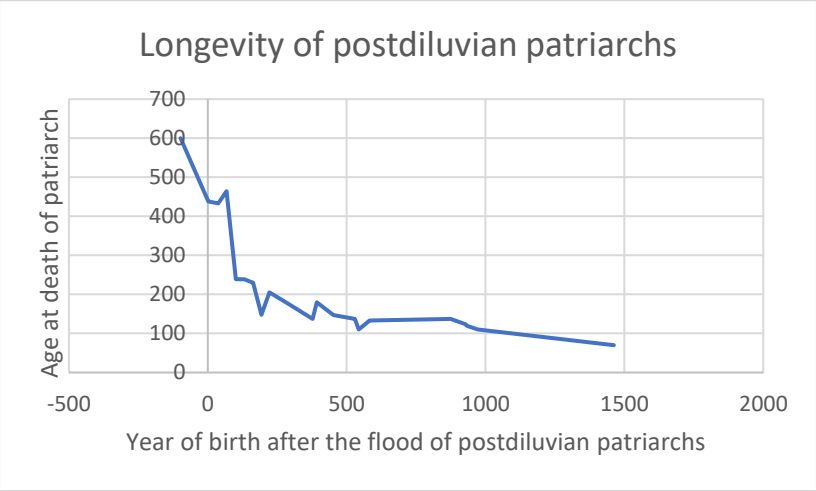
Table 5

Longevity of Postdiluvian Patriarchs

PATRIARCH	AGE AT DEATH	BIRTH YAF*	DEATH YAF*
Shem	600	-98	502
Arpachshad	438	2	440
Shelah	433	37	470
Eber	464	67	531
Peleg	239	101	340
Reu	239	131	370
Serug	230	163	393
Nahor	148	193	341
Terah	205	222	427
Abraham	175	292	467
Ishmael	137	378	515
Isaac	180	392	572
Jacob	147	452	599
Levi	137	529	666
Joseph	110	543	653
Kohath	133	583	716
Amram	137	874	1011
Aaron	123	929	1052
Moses	120	932	1052
Joshua	110	972	1082
David	70	1392	1462

*YAF = years after flood

Graph 1



If large gaps exist, they are not evident from the text of Genesis 11. The writer of Genesis (Moses) records the age at which the people of this genealogy begat the person in question. For example, Shem begat Arpachshad when he was 100 years old, Arpachshad begat Shelah when he was 35 years old, etc. How can large gaps exist in this chronology? Some argue for the possibility of smaller gaps (on the order of a few hundred years [cf. Appendixes A and B]). This has some credibility. This problem is discussed by: Fulford (pp. 116-119), Pledge (pp. 174-180), J. W. Sears (pp. 17-20), Thompson (1986a, pp. 98-102), and Whitcomb and Morris (pp. 474-489). Even if there are gaps in the chronology, the flood could not be reasonably dated earlier than about 4,000 BC. This Masoretic Text gives a date of about 2,500 BC for the flood.[197] Most of these gaps relate to variations in the Hebrew manuscripts of the Scriptures. Jude reveals that Enoch was the seventh from Adam (Jude 14); therefore, it is not possible for there to be any gaps in the genealogy between Adam and Enoch.

[197] The LXX, Samaritan Pentateuch, and Josephus date the flood at about 3298 BC (cf. Appendixes A and B). Remember, we are dealing with rounded numbers here.

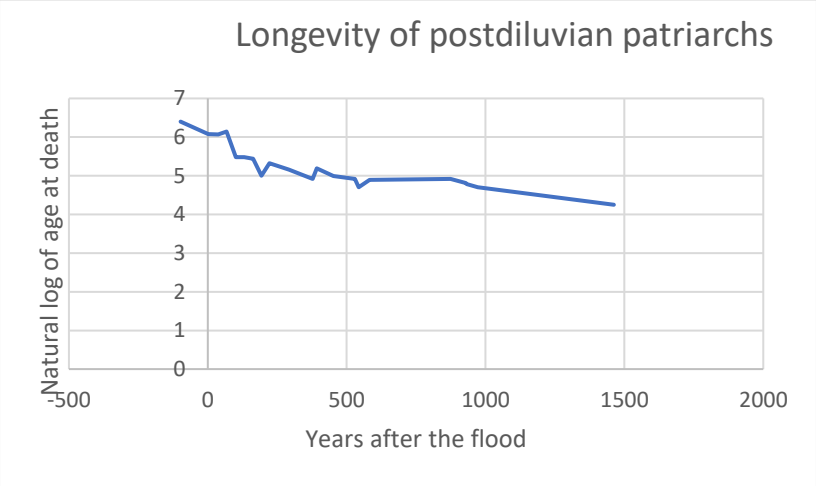
Table 6

Log_e of the Longevity of Postdiluvian Patriarchs

PATRIARCH	Log_e of AGE AT DEATH	BIRTH YAF*	DEATH YAF*
Shem	6.4	-98	502
Arpachshad	6.08	2	440
Shelah	6.07	37	470
Eber	6.14	67	531
Peleg	5.48	101	340
Reu	5.48	131	370
Serug	5.44	163	393
Nahor	5.0	193	341
Terah	5.32	222	427
Abraham	5.16	292	467
Ishmael	4.92	378	515
Isaac	5.19	392	572
Jacob	4.99	452	599
Levi	4.92	529	666
Joseph	4.7	543	653
Kohath	4.89	583	716
Amram	4.92	874	1011
Aaron	4.81	929	1052
Moses	4.79	932	1052
Joshua	4.7	972	1082
David	4.25	1392	1462

*YAF = years after flood

Graph 2



If Graph 1 is a decaying exponential function, a graph of the natural logarithm of the ages at death of these patriarchs should be a straight line. The plot of Graph 2 appears to be linear (a straight line). This can be easily tested by using a mathematical process called "linear regression."[198] The application of linear regression to the data yields the results of Table 7.

Table 7

Results of Linear Regression Analysis With Shem

MATHEMATICAL RELATIONSHIP	VALUE OF THE COEFFICIENT
Coefficient of determination ρ^2	0.723
Coefficient of correlation ρ	0.85

[198] Linear regression is the process by which data points are used to reconstruct the linear equation that most nearly approximates them.

Table 8

Results of Linear Regression Analysis Without Shem

MATHEMATICAL RELATIONSHIP	VALUE OF THE COEFFICIENT
Coefficient of determination ρ^2	0.706
Coefficient of correlation ρ	0.840

The hypothesis of the AAOEC is that there is no mathematical relationship between the decreasing longevity of the postdiluvian patriarchs (Masoretic Text) and the lapse of time after the flood. The application of linear regression to the data demonstrates that there is a coefficient of correlation (also called "goodness of fit") of 0.85. This means that the probability is 0.85 that we have the correct formula for the graph.[199] This is a high degree of probability for this kind of data. The fact that the longevity of the postdiluvian patriarchs follows a decaying exponential curve is further evidence that there are no lengthy gaps in the genealogy.

Why do Some Claim There are Gaps?

Some theists have postulated that gaps exist in the genealogies for several different reasons. *First*, the Septuagint (LXX)[200] has longer genealogies than the Masoretic[201] text. A patriarch named Cainan is between Arpachshad and Shelah according to Luke 3:36.[202] The translators of the LXX were possibly influenced by the antedulivian chronology of Manetho who wrote about 300 B.C. This chronology is, no doubt, in error.

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[199] The Septuagint text has a higher probability (cf. Appendix A).

[200] The Septuagint (abbreviated LXX) is the Greek translation of the Old Testament Scriptures. I have recalculated the regression calculations for the information given in the LXX in Appendix A.

[201] The Masoretic text was copied by a school of scribes called "Massoretes" which existed from AD 500-900.

[202] All Greek MSS except p^{75vid} and D have Cainan in Lk. 3:36.

Second, some want to conform the genealogies with the time of the Egyptian chronologies. The Egyptian chronologies are neither inspired of God nor from an unimpeachable source; therefore, there is no need to conform biblical interpretations to them. What evidence has been given to accept the Egyptian chronologies (cf. the discussion of Rohl in his book)?

Third, more time was thought to have been needed to obtain the numbers of people that inhabited the Earth during the lifetime of Abraham. This is not necessary if it is considered that Abraham lived about 510 years after the flood. With a net birth rate of 6 children per family every 30 years the population would triple every 30 years. This would give a total population of over 300 million people at the time Abraham went to Canaan. If Noah's sons each had 20 children and the following offspring had 6 children per couple, there could be over 1 billion people by this time.

Fourth, some want to allow enough time to have the "ice ages." In this treatise this author has demonstrated the lack of need to allow for this time. These ice caps were deposited during the flood and have been melting since that time. The only "ice age" was that which was begun by the "windows of the heavens."

Fifth, some claim there must be gaps in the genealogies because they are convinced that dendrochronology has demonstrated that the flood occurred about 9,000 years ago. This is the conclusion of the creationist Aardsma: "The first is a bristlecone pine chronology constructed by C.W. Ferguson which presently extends back some eight thousand seven hundred years." (p. 25) This author will discuss several problems with dendrochronology in Chapters 13 (p. 253) and 16 (p. 368).

Sixth, there is a slight difference in the wordings of Genesis 5 and Genesis 11. This does not demand that one be literal and the other genealogy have gaps. There is no rational reason for claiming these differences demand that one has gaps. This interpretation is based upon unsound methods of determining

if language is literal or figurative (unsound hermeneutics). Lockhart properly states:

> Since the literal is the most usual signification of a word, and therefore occurs much more frequently than the figurative, any term will be regarded as literal until there is good reason for a different understanding. (p. 157)

This principle of hermeneutics was developed by Dungan (pp. 195-203). Dungan set forth seven basic rules for determining whether or not language is literal or figurative (pp. 195-203).

Inflated Ages for Antediluvian Patriarchs?

Some have asserted that the years of age of the antediluvian and postdiluvian patriarchs are inflated and that they are really just months. This makes the Bible look ridiculous because it would make some men become fathers when they were just a few months old. The genealogies of Genesis 5 and Genesis 11 would look ridiculous if each year were a month. For example, Seth was 105 years old when he begat Enosh (Gen. 5:6). If each year is just one month, then Seth was only eight years and nine months old when he fathered a child!

Conclusion

The events of Genesis 6-9 did more to shape the Earth than any single event since the creation of Genesis 1-2. While all the phenomena seen in the rock formations and on the Earth have not been explained, this treatise has set forth the most reasonable harmonization of both the Word of God, laws of science, and facts of nature.

THE CREATION OF THE UNIVERSE IN A FULL-GROWN STATE

CHAPTER TWELVE

This has been referred to as the *doctrine of apparent age*[203] by some writers. It is apparent that if Adam and Eve were created full-grown (mature), then it is possible that other life forms could have been created full-grown (mature). In fact, it will be established that it was necessary for these life forms to be created full-grown. It would also have been necessary for more than one pair of each life form to be created.

This would have several results: (1) it would have life forms such as coral reefs, forests, savannas, prairies, etc. to exist full-grown, (2) it would explain the appearance of age for the stars, (3) it would explain how the Earth's surface could have been cooled off in a matter of seconds by God, instead of in millions of years as AAOEC claim.

The doctrine of a full-grown creation is implicitly taught throughout the Scriptures. For example, when Jesus turned the water into wine (Jn. 2:1-11), the wine (probably unfermented grape juice) had all of the attributes of wine that had grown in a vineyard and been pressed from grapes. When Jesus multiplied the fishes (Mk. 6:35-44), the fish were as complete as those which had been caught by fishermen. If the stars were to be "**for signs, and for seasons, and for days and years**" (Gen. 1:14-19), it would be necessary that He create them with the light already reaching the Earth for man's usage. This is just as possible as it was to multiply the fish. In order for this to happen God could have done it by either placing the light in place between the star and the Earth when He created it or if the speed of light was much greater then, than it is now, it could have reached the Earth in a shorter time span.

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[203] This author has rejected this terminology because it is based upon Lyellian and/or punctuated uniformitarian assumptions.

Since many organisms cannot survive without their parents, it would be necessary for these organisms to have been created *full-grown* instead of in their infancy state. It would be necessary for trees to be producing fruit for Adam and Eve, or they would starve while the trees matured and produced fruit. In addition, the birds were said to fly in the day they were created (Gen. 1:20). Birds do not fly in their infancy (can the reader name any that fly in their infancy?). Whole forests would need to be in place to provide food for animals, nests for birds, etc. Vast grasslands (savannas and prairies) would need to be in place to supply food for the herbivores. The creation of forests, savannas, prairies, coral reefs, etc. *in situ* solves the problem of a runaway greenhouse effect of the carbon being in the atmosphere in the form of carbon dioxide (CO_2) – cf. p. 67. This seems to be what God said occurred (Gen. 1:11-13). Is anything too difficult for Jehovah – Yahweh (Gen. 18:14)?

The Speed of Light

There are modern-day scientists who are questioning the claim that the speed of light is a constant; some are claiming that the speed of light has been slowing down at an exponential rate (Bethell, pp. 69-71). Some of the arguments against the constancy of the speed of light have been published in a journal entitled "*Galilean Electrodynamics*." If they are right, the light could have reached the Earth in a much shorter time span than the present light. The question of the constancy of the speed of light is an open question which will need to be considered as additional information warrants (this author always considered the speed of light to be constant but will keep an open mind). Schaefer points out that there is no "ancient light" to be measured and compared with "present-day light" (p. 200).

Hubble's Law and the Age of the Universe

In 1924 Edwin Hubble set forth his law which states that the velocity of a galaxy moving away from the Earth is proportional to its distance from the Earth. In algebraic terms Hubble's law is: $v = Hd$ where v = the recessional velocity of

the galaxy, H = Hubble's constant (which is not precisely known); it is assumed to be = 50 km/s/(10^6 parsecs), and d = the distance the galaxy is from the Earth.

> One parsec, defined as the distance at which the radius of the Earth's orbit about the Sun would subtend one second of arc, is numerically about 3.26 light-years.[204] (Maddox, p. 16)

Each element gives off a different spectrum of light when it is heated to a certain temperature. When a star is moving away from the observer, it will lengthen the wavelength of the light coming from the star that shifts the light toward the red part of the spectrum. This is called "redshift." It is assumed that this phenomenon results from the Doppler effect. This effect can be observed by standing beside a highway and listening to a car come toward the observer and then move away from the observer. The results of the Doppler effect can be heard as the pitch of the sound from the car rises as the car approaches and then lowers after the car passes the observer.

If the speed of light is not constant, it might also explain the phenomenon known as "redshift" which is used to date the age of the Universe. Redshift, that is usually explained by the Doppler effect, could be explained by a decreasing velocity of the light. This is linked to the Hubble constant in the calculation of the speed the Universe is expanding. Both Arp (1974, pp. 61-67) and Balkowsky, *et al.* (pp. 69-75) give evidence for non-Hubble redshift. Arp has an extensive discussion of non-Hubble redshift (Arp, 1987). These writers give other reasons for non-Hubble redshift (other than a changing velocity of light).

The usage of redshift in Hubble's Law assumes the Universe had a beginning (a point from which the galaxies are moving). The beginning of the Universe is usually called *The Big Bang* by AAOEC. *The Big Bang* assumes the Universe began at one point and therefore it had a beginning. All that is being done by the AAOEC and the theist is to argue about when the

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[204] 1 light year = the distance light travels in 1 year = 5.87×10^{12} miles = 9.44×10^{12} kilometers (*it is not a measure of time*).

Universe began. The eternality of matter violates both the *First law of thermodynamics*, the *Second law of thermodynamics*, and the *Principle of Entropy*. (cf. p. 330-331 and Fox, 2024, Appendix W) Some scientists have claimed that the *Second law of thermodynamics* does not apply to the Universe. This is a violation of one of the elementary and most fundamental laws of science. This is not just a law of physics; it is a fundamental principle of most areas of science. The claim that the *Second law of thermodynamics* does not apply to the *Big Bang* is an implicit rejection of the *Principle of uniformity* (cf. p. 23). The AAOEC is guilty of the fallacy of *special pleading* (cf. Footnote 104 p. 104) when he sets aside the *Second law of thermodynamics* for *The Big Bang* and disallows it for miraculous creation by God. If the Universe did not begin as a single point with infinite mass (*The Big Bang*), but was created full-grown, the age calculated by Hubble's law is older than the Universe.

Humphreys explains redshift by another means. He theorizes that God created the Universe by means of a *White hole*[205] which began to expand. The edges of the *White hole* would effectively make the measurement of time for distant stars impossible. This would also explain redshift. His theory is derived from Einstein's *General theory of relativity*. The theory set forth by Humphreys seems to be quite plausible although it is possible that some of his interpretations of some passages of Scripture are incorrect.

Problems with *The Big Bang* Theory

One argument for *The Big Bang* is that the distant galaxies are traveling faster than near galaxies. This is what one would expect from an explosion (the distant objects travel faster than the near objects). Wolfson and Pasachoff state:

> In 1929 the American astronomer Edwin Hubble (after whom the Space Telescope was named) found that spectral lines from distant galaxies were shifted toward the red end of the spectrum, with the shift proportional to their

[205] A *white hole* is essentially the opposite of a *black hole* in that it entails matter that is expanding.

> distances. This is exactly what one would expect if a colossal explosion had flung them apart. (p. 1054)

These differences in the velocities of the galaxies (or apparent differences) could also be explained by a change in the velocity of light (the changes would be greatest for the distant objects). Support of *The Big Bang* theory from this point is based upon the logical fallacy of *affirming the consequent*; therefore, it proves nothing.

> First Premise: If *The Big Bang* occurred, then the farthest objects should be travelling faster than the nearest objects.
> Second Premise: The farthest objects are travelling faster than the nearest objects.
> Conclusion: *The Big Bang* occurred.

The *first* problem with *The Big Bang* is that scientists have not found enough mass in the Universe to cause *The Big Bang* to occur.

> We then add up the total mass of all the galaxies in the cluster and compare it to the amount of mass we know must be present to counterbalance the observed velocity dispersion. The result is astonishing: there is by a factor of seven too little mass in the galaxies to counteract the tendency for the cluster to disperse. This error is not trivial: since the Coma cluster has not yet dispersed, for every seven kilograms of mass we feel must be in the cluster, we can account for only one kilogram in the form of galaxies. (Margon, p. 4)

Scientists cannot find this matter, so they have theorized an extensive amount of matter called *dark matter*. This matter is necessary for the occurrence of *The Big Bang*. The biblical theist knows that God created by fiat (His power – Gen. 1:1).

The *second* problem with *The Big Bang* is that it cannot account for the heavier elements.

> The big bang theory of the origin of the universe is believed to account for the formation of most of the matter in nature as well as its observed abundances, that is, the 98% of all matter known to be hydrogen and helium. However big bang theory accounts for little of nature's diversity, that is, the 2% comprising the elements from carbon to uranium.

(Viola, p. 842)

This failure of *The Big Bang* theory to explain the facts does not seem to bother the AAOEC because the only alternative is to accept creation by God.[206] This problem is discussed in a book edited by Prantzos and Vangioni-Flam (pp. 407-408). With the AAOEC worldview the AAOEC scientist has a system which he admits cannot explain the facts, but he will not modify his system to conform to the facts as should be done by scientists. Why do they not revise their hypothesis? It is obvious that the only alternative is creation by a Creator which they refuse to accept (cf. Rom. 1:28 and Stokes, p. 218). Materialism is a form of idolatry that says mankind was created by natural forces and non-living matter.

The *third* problem with *The Big Bang* is that it requires that different laws of physics were in place during part of *The Big Bang*. Wolfson and Pasachoff state: "Present-day physics cannot address times before 10^{-43}s, which requires a merging of quantum theory and general relativity." (p. 1055) This amounts to an implicit denial of the principle of methodological uniformitarianism (cf. p. 18). Gould (1965) defines methodological uniformitarianism as "uniformity that asserted the invariability of natural laws in space and time." (p. 224) The inconsistency of the AAOEC is evident in that he sets aside the laws of physics for *The Big Bang* but cannot allow these laws to be set aside at other times. Of course, the AAOEC is committing the logical fallacy of *special pleading* here.

The *fourth* problem with *The Big Bang* is that it should have created magnetic monopoles[207]. A magnetic monopole is an isolated north or south magnetic pole (a magnetic north pole without an associated magnetic south pole or a magnetic south pole without a magnetic north pole). Wolfson and Pasachoff state:

> … theories of elementary particles suggest that magnetic monopoles should have been created in the Big Bang event

[206] Some old Earth creationists think that God created the physical realm by the Big Bang and living organisms by theistic macroevolution.

[207] A monopole is a hypothetical north or south magnetic pole existing alone.

> with which the universe began … No one has yet found a magnetic monopole, however, although serious experimental searches continue. (p. 773)

There are a number of serious problems with *Big Bang* cosmology.

A total of seven problems with *The Big Bang* cosmology are listed by Maddox (pp. 16-18). In addition, Linde lists 6 objections to the "Big Bang cosmology" (pp. 48-49). Some of the objections listed by Linde are different from those of Maddox. These problems need to be solved in order for *The Big Bang Theory* to be validated. This is just an unproven hypothesis and without answers to these problems and perhaps others to be discovered, will remain an unproven hypothesis.

Other Problems with Hubble's Law

Hubble's constant (H) is assumed to be H = 50 km/s/(10^6 parsecs). From this value, assuming that redshift is due to the Doppler effect, the age of the Universe is calculated to be 19.5 billion years old.

> Some astronomers say it is about 15 km per second per million light years, while others claim it is higher, 23 km/s per million light-years. Two new studies provide yet another answer: about 11 km/s per million light-years … This value of the Hubble constant implies that the universe could be 25 billion years old. (Anonymous #16, Astronomy, p. 22)

The value of Hubble's constant is far from being settled. The reader should be aware that "teams of cosmologists continue to argue back and forth about the numerical value of the Hubble constant." (Cowen, 1995, p. 198) All of these calculations are based upon the assumption that the Universe began as a single point with infinite mass (*The Big Bang* theory is true). In fact, astronomers and astrophysicists disagree on the value of Hubble's constant (H).

The value of the distance used in Hubble's law is not known with any degree of confidence.

Without question, one of the greatest challenges in

> astrophysics is the attempt to derive reliable distances to objects in the universe. In what is commonly known as the distance "ladder," there exist steps that allow us to estimate distances sequentially from nearby stars to distant galaxies. In the interest of honesty, however, the distance ladder might better be termed the distance "house of cards," because the reliability of each level depends critically on the reliability of the previous presumably more secure, level. (N. Tyson, p. 7)

This type of reasoning is not uncommon in calculations of the age of things by AAOEC scientists.

The most obvious problem with *The Big Bang* is that is assumes that something can come from nothing!

Would God Be Deceptive to Create Things Full-grown?

God would only be deceptive if He created things full-grown and then attempted to convince mankind that those things were older than they really were. The reader should remember that God told mankind where he came from and Who created him and all the things that man sees. Adam was told about the creation and the fact that God created it for mankind (Gen. 1:26-31). It only appears old to one who does not believe what God said in Genesis 1-2 and how the flood of Genesis 6-9 affected the physical realm.

Those who look backwards in time and see an Earth that is several thousand years old must realize that something only appears old to one who knows what an "old thing" looks like. Adam and Eve had no experience with old things when they were created, and it looked new to them.

Summary

Many assumptions are made about the necessity of having long periods of time to grow the large amounts of fossils which are found in the surface of the Earth. These assumptions are based upon uniformitarian assumptions. Two things would occur if the premises of this book are true: (1) the Earth would

appear older because the coral reefs, animals, plants, etc. would have been created full-grown (whole forests, coral reefs, savannas, etc. would have been created *in situ*) and (2) the antediluvian conditions would have been conducive to a much more rapid rate of growth for both plants and animals.

Conclusion

It would be necessary for the Universe to be created *full-grown* rather than in a state of infancy. The doctrine of a full-grown creation is the most reasonable interpretation of the creation which has been set forth. If the stars serve **for signs and for seasons** (Gen. 1:14-15), then their light would be needed for man to use them at the time of man's creation, or shortly thereafter.

ERRORS IN MODERN GEOLOGY

CHAPTER THIRTEEN

Introduction

There are a number of assumptions that are basic in the interpretation of geologic formations. In this brief section three basic matters will be addressed. *First*, the dating of rocks by fossils will be discussed. *Second*, radiometric dating techniques used to date the Earth will be discussed. *Third*, several geologic formations will be discussed in order to demonstrate that the AAOEC have no basis for their claims of an old Earth brought about by uniformitarian assumptions.

Fossils and the Age of Rocks

AAOEC geologists are frequently guilty of *circular reasoning* in their dating of rocks. They date the fossils by the rocks they are in and the rocks by the fossils in them.

> Fossils are useful in determining the age of rock because life has changed through geologic time. Rock of different ages contain different fossil assemblages, even if deposited in the same environment. The age of a sedimentary rock can therefore be determined from the fossils contained within it, provided, of course, the age of the fossils is known. (Shipman, Wilson, and Todd, p. 702)

This is admitted by O'Rourke:

> The procession of life was never witnessed; it is inferred. The vertical sequence of fossils is thought to represent a process because the enclosing rocks are interpreted as a process. The rocks do date the fossils, but the fossils date the rocks more accurately. Stratigraphy cannot avoid this kind of reasoning, if it insists on using only temporal concepts, because circularity is inherent in the derivation of time scales.
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> Many stratigraphers feel that these problems have been obviated with recent progress in radiometric analysis, which is supposed to provide direct determinations of

> "absolute age". Feinstratigraphers doubt that the technique will ever be as accurate as correlation by index fossils. (p. 53)

This is denied by the atheist Raup: "Rarely, if ever, is the stage of evolution used as a means of placing a fossil in the geologic time scale." (p. 17)

The geologist uses the *principle of faunal succession* to date both the rocks and the fossils.

> Geologists see the natural divisions of life arranged vertically in sedimentary rocks that have been laid down over millions of years. They have a fundamental principle known as the *principle of faunal succession*, which states that fossil organisms succeed one another in a definite and determinable order. Thus, any time period can be recognized by its fossil content. Once the period is established, rocks of the same age can be identified in widely separated regions of Earth. In the late eighteenth and early nineteenth centuries geologists used this principle to construct the geologic time scale. (Shipman, Wilson, and Todd, p. 704)

The *principle of faunal succession* has its problems. For example, in Antarctica the ice caps are assumed to be approximately 14 million years old, yet they have fossils under them that are only 2.4 to 3 million years old (by AAOEC dating systems).

> The established view of Antarctic glacial history during the Cenozoic period is that considerable cooling occurred ~ 40 Myr[208] ago, with extensive ice first covering the continent ~ 14 Myr ago, and persisting continuously to the present. This is based on oxygen isotope variation in calcareous microfossils from deep sea cores, and geomorphic evidence from the Transanarctic Mountains of cold climates dating back at least 11 Myr, including several cold desert pavements.
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> Recent work, however, has described warm mid-Pliocene marine incursion in the area around McMurdo Sound, …

[208] Myr = Million years.

> These incursions have been age-calibrated by potassium-argon (K-Ar) dating of basalt flows and tephra. But the crucial evidence for mid-Pliocene deglaciation of the Antarctic continent derives from the discovery, in glacial beds sourced from the East Antarctic interior, of microfossils (diatoms) that include taxa said to be only ~ 3 Myr old. This age was based on *Thalassiosira insigna* and *T. vulnifica*, known to occur together only in the age range 3.1 to 2.5 Myr in a well-dated sequence cored on Deep-Sea Drilling Program leg 71 … This age range is widely accepted by diatom workers, and has since been confirmed from Ocean Drilling Program (ODP) cores on leg 120 in the south India Ocean. (Barrett, *et al.*, p. 816)

It is evident that either these fossils lived long after they were supposed to be extinct or the dating of the ice caps at 14 million years ago is wrong or possibly both are wrong. It should be noted that several dating techniques were employed in this research with conflicting results! This proves that at least some, perhaps all, of these dating techniques contain serious errors. Fossils would not necessarily follow in chronological order with a tidal flood.

The geologist also uses the *law of superposition*: "This law is the simple observation that in a succession of stratified deposits the younger layers lie on top of the older layers." (Shipman, Wilson, and Todd, p. 701) There are at least two problems with this methodology of dating rocks. *First*, there are extensive gaps in the sedimentary rocks (in some instances gaps which supposedly amount to millions of years). *Second*, there are a number of instances, called *overthrusts*, in which there are thousands of square miles of "old rocks" lying on top of "young rocks." The reader should be cognizant of the fact that the forces required to slide "old rocks" on the top of "young rocks" are astronomical! This is counter to the *law of superposition*. It is evident that either the *law of superposition* is unsound, or the "old rocks" are not older than the "young rocks." These problems have led the AAOEC geologists to look for a new method of dating the rocks. This new method is based upon radioactive decay of certain elements (uranium and thorium).

Uniformitarian Assumptions on Dating the Age of the Earth

Uniformitarian geology assumes that the present is the key to the past. In effect the assumption is made that the Earth has been shaped by slow relatively unchanging processes. This rejects any possibility of a universal catastrophe, such as the universal flood of Genesis 6-9. Ordway states:

> A number of methods for estimating geologic time have been applied, and each has certain features in common with the rest: (1) attention is fixed upon some change or process which is taking place on the Earth at present; (2) this change is assumed to have been going on uniformly[209] since very early in the history of the Earth, or an average rate is estimated; (3) the total change is measured; and (4) the annual quantity of the change is determined. Dividing the total change by the annual change then gives the age of the Earth. (p. 42)

Ordway (p. 42) states that geologists once used the sodium content of the oceans to determine the age of the Earth. It has not been possible to use the mineral content of the ocean waters to date the oceans because the various elements give conflicting ages for the ocean waters. According to Goldberg, a number of elements have resident times[210] of less than 1000 years in the oceans (pp. 164-177). Since the Earth is obviously more than 1000 years old, it is evident that some unknown process recycles these elements from the oceans back to land. The AAOEC claims that every element with a resident time of less than 4.5 billion years is recycled. The AAOEC must know that all the elements with a resident time of less than 4.5 billion years are recycled by some system. If he does not know how they are recycled, he cannot know that the Earth is 4.5 billion years old. This would be true unless he has another system of dating that is absolutely ironclad that dates the Earth to 4.5 billion years old.[211] The theist does not have to

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[209] Note how he uses uniformitarian assumptions here.

[210] The time it takes to deposit a substance in the ocean (assuming the substance did not exist in the ocean when the ocean began).

[211] The AAOEC claims that radiometric dating gives an absolute age of 4.5

prove that the elements with a resident time of less than 7,000 years are recycled because the AAOEC agrees that they must be recycled. But what of the elements with resident times greater than 7,000 years and less than 4.5 billion years? If both special creation and the flood occurred, then either these elements were in the ocean at creation, or their relative values were changed during the flood. Another possibility is that they were present at creation, their relative values were changed during the flood, and they are being recycled. The usage of the resident times of elements in the oceans to prove that the Earth is only ≈6,000 years old contains the fallacy of an *appeal to ignorance* (cf. pp. 103-104). If it can be proven that they are not recycled, this is not the fallacy of an *appeal to ignorance*.

The deposition of sediment in the oceans is either quite slow or the oceans are quite young (a few thousand years old [cf. pp. 49-51]).

> Protactinium (Pa^{231}) and Thorium (Th^{230}) are both present in the sediments at their deposition. Since these radioactive elements have different half-lives, the ratio between them in a sediment, changing with time, is a measure of its age. The present limit of the method is at about 75,000 B.P.[212] Earlier dates than this for samples from deep-sea cores have been estimated by extrapolation of dated lengths in their upper parts. An assumption is necessarily involved: that the rate of sedimentation has been constant throughout the formation of the column of sediment. (Cornwall, p. 146)

There are at least four things involved in this dating technique. *First*, there is the usage of radiometric dating by the assumed constancy of the decay rate of protactinium and thorium. *Second*, there is an assumed constancy of the deposition rate of the sediment. *Third*, both of these assumptions are probably made in the dating of the upper sediment in the core that serves as the basis for the dating of the lower portions of the core. *Fourth*, the AAOEC assumes the quantity of these elements at the time of deposition of the sediment.

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billion years for the Earth.

[212] BP = before present (before 1950 when atomic bombs were being tested).

The measurement of absolute ages of the rocks or of geologic events is based upon uniformitarian assumptions.

> The age can be computed if the investigator divides the total amount of geologic work accomplished by the rate at which the geologic process is currently operating. For example, we can hope to measure the age of a river delta by dividing its total volume by the volume of sediment deposited on the delta each year. In a similar manner, we could attempt to determine the age of the oceans by dividing their total salt content by the volume of salt the many rivers of the world dump into the seas each year.
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> For a variety of reasons, most of these early efforts were completely inaccurate. The age of the oceans was incorrectly calculated to be 90 million years. (Shipman, Wilson, and Todd, p. 706)

These assumptions are based upon the assumption of uniformity of processes and rates which are extrapolated backwards in time. Why do Shipman *et al.* reject extrapolation in these instances, but accept it in other instances? AAOEC need to answer this question with a reasonable answer.

These assumptions reject any possibility of rapid erosion as occurred during the flood. They assume the oceans were originally composed of fresh water that changed into salt water with time. They neglect the possibility that the flood might have changed the mineral content of the ocean water. The rocks are dated by uniformitarian assumptions.

Methods of Dating the Age of the Earth

The dating of the age of the Earth is largely based upon radioactive decay of certain elements (uranium and thorium). Uranium goes through an extensive set of decays to become lead $_{82}Pb^{206}$; it alpha decays from $_{92}U^{238}$ to become thorium $_{90}Th^{234}$, then beta decays to protactinium $_{91}Pa^{234}$, then beta decays to $_{92}U^{234}$, then alpha decays to $_{90}Th^{234}$, and through several other stages to become lead $_{82}Pb^{206}$. This technique was introduced by Claire C. Patterson in 1953. It is interesting

that the nuclear physics book that this author used in 1962 listed fewer possible avenues of decay for this process than is presently listed in physics books. Is it possible that there are other avenues of decay that are unknown which may change a number of things in this decay process?

With regard to the decay constant of radioactive isotopes Jueneman (p. 21) says:

> The age of our globe is presently thought to be some 4.5 billion years, based on radiodecay rates of uranium and thorium. Such "confirmation" may be short-lived, as nature is not to be discovered quite so easily. There has been in recent years the horrible realization that radiodecay rates are not as constant as previously thought, nor are they immune to environmental influences.

The age of volcanic rocks is dated by the potassium-argon method. Funkhouser and Naughton (p. 4603) say:

> The most evident generalization that can be made from an examination of the results summarized in Tables 1 and 2 would be to note the anomalously great ages of the xenolithic[213] samples, if we assume the real age to be that of the host rock. The matrix rock of the Hualalai nodules was erupted during 1800-1801 (Richter and Murata, 1961) and, indeed, can be said to contain no measurable radiogenic argon within experimental error … .

The Hualalai nodules were determined to be 2040, 960, 1500, >1580, >791, 160, 2470, and 2960 years old by eight different tests.[214] Only one of these dates is even close to the true age of the rocks (160 years). The reader should not interpret this to mean that this author is claiming that this one instance proves that potassium-argon dating is unsound in all instances. This is an excellent example of problems with this system. If potassium-argon dating was off by several orders of magnitude in this instance in which the true age is known, how can it be trusted in other instances in which the age is not known? This forces the AAOEC to "calibrate" the potassium-argon method with another system. His calibration techniques

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[213] Xenolith = a fragment of a rock included in another rock.

[214] The mathematical symbol > means "greater than."

usually employ a form of *circular reasoning*.

The equation for radioactive decay is $N = N_0e^{-kt}$, with N being the amount of the radioactive substance remaining after the decay, N_0 being the amount of the radioactive substance at time t = 0 (the beginning), e being the base for natural logarithms (e ≈ 2.71828), k[215] being the decay rate of the isotope, and t being the time that has elapsed from time t = 0. N can be measured, e is a universal constant, and it has been considered that k was a constant. This still leaves two variables to solve one equation. In order to solve the equation, the value of one of the variables must be assumed. The value of N_0 is usually assumed and t is calculated. Any value of time can be obtained by merely assuming that N_0 has a different value. O'Rourke admits that the AAOEC assumed an age for the rocks in order to calibrate the radiometric dating system:

> The first radiometric dates had to be calibrated by comparison with some other standard, however crude. The best previous time scales had been obtained by estimating the average rate of sedimentation and applying it to the total thickness of sedimentary rocks in the geologic column.[216] The total cannot be measured at any one place; it had to be added up from empirical correlations. Plotting the radiometric values against the maximum thickness of the geologic systems made a reassuring test. (p. 54)

This whole procedure is explained by Cloud:

> Knowing l, it is only necessary to know the *number of parent atoms* (P_t), the *number of daughter atoms* (D_t) in the end product, and the logarithm to the base *e* (=2.71828) to compute the age. Although an actual calculation is not made here, readers may as well see that the equation whose solution gives the age *t* when these quantities are correctly entered is not excessively complicated: $t = 1/l \log_e(D_t/P_t + 1)$.

The assumptions inherent in this calculation are quite evident to one who has taken a couple of courses in high-school

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[215] This decay constant is usually listed as the Greek letter λ in physics literature.

[216] Of course, this is based upon Lyellian uniformitarian assumptions.

algebra.[217]

In addition, scientists have discovered that k is not constant:

> Long and well taught is the axiom that radioactive decay rates are described by $N = N_0e^{-kt}$, with half-life constant .693/k. These equations resulted initially from studies done with crude instruments some 70 years ago. Bluntly, they are incorrect, nonetheless appear in our latest textbooks to compound the errors of past generations. This in spite of more recent evidence … Studies have varied the decay characteristics of 12 other radionuclides with changes in the energy state of the orbital electrons; by pressure, temperature, electric and magnetic fields, stress in monomolecular layers,[218] etc. (Dudley, p. 2)

If pressure can affect the decay rate of radionuclides, why do some assume the decay rate of radionuclides in the core of the Earth have the same decay rate they have on the surface of the Earth? The pressures in the core of the Earth are enormous (they exceed 1 megabar [≈1 million times the normal atmospheric pressure]). Some radioactive isotopes have their excess neutrons or protons in a halo around the nucleus, rather than in the nucleus (cf. Austin and Bertsch, pp. 90-95). This should make them vulnerable to extreme pressures and temperatures, which may greatly accelerate the decay of these isotopes. This could greatly change the decay rate of radioactive isotopes in the core of the Earth. Anderson and Spangler (pp. 31-33) raise serious questions about the constancy of the decay constant "k." AAOEC are quick to point out that these variations in the decay rate are small, but the reader should be aware that this opens the possibility that other unknown factors affect the decay constant. AAOEC are irrational to say that the decay constants are "only changed small amounts." What has been proven by these cites is that decay constants vary by at least these amounts. Scientists

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[217] Since there are three variables (t, D_t, and P_t) in order to solve the equation, the value of two variables must be either known or assumed. (The AAOEC has assumed the value of D_t.)

[218] Monomolecular is a monolayer; a film or layer having the thickness of one molecule of the adsorbed substance.

should remember the nature of scientific evidence.[219]

There are other facts which demonstrate that the radiometric methods of dating the age of the Earth are flawed. *First*, the radioactive decay[220] of uranium that produces plutonium supposedly does not occur in nature, yet plutonium does occur in nature.

> Plutonium occurs in nature. Dr. Darleane Hoffman and Francine Lawrence at the Los Alamos Scientific Laboratory have chemically isolated about 8×10^{-15} grams of plutonium-224 from 85 kg. of basnasite ore from the Mountain Pass, Calif., mine of Molybdenum Corp. of America. (Anonymous #17, Chemical and Engineering News, 1971, p. 29)

This can be easily explained by accepting that plutonium existed at the time of the creation and that the creation occurred at a much later date than 4.5 billion years ago. If plutonium existed at the time of the creation, it is reasonable that the radioactive isotope of thorium, ${}_{90}Th^{234}$, also existed.

Second, it is widely known that the fission decay rate of radioactive isotopes of uranium is affected by the presence of radioactive materials. If the amount of uranium is greater than the "critical mass," then fission[221] of the uranium atoms will be sustained, and the decay of each atom will cause the decay of other atoms by a "chain reaction." This process is controlled in a nuclear reactor and uranium (${}_{92}U^{235}$), with a supposed half-life of 0.71 billion years and ${}_{92}U^{238}$ with a supposed half-life of 4.51 billion years, are changed into other elements in the matter of a few months, rather than 0.71 billion years – reactors do not use ${}_{92}U^{238}$. It is possible that the radioactive isotopes of various elements (uranium, thorium, etc.) were deposited together to sustain these reactions to help keep the interior of the Earth warm before the flood. It is the opinion of this author that the interior of the Earth is neither kept molten by nuclear fission nor by radioactive decay. This would keep the core of the Earth molten and sustain a large

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[219] The scientific hypothesis is always framed in a negative form.
[220] Produced by neutron capture in uranium 238 (${}_{92}U^{238}$).
[221] The splitting of an atomic nucleus to form two or more other atoms.

magnetic field. The large magnetic field would protect the Earth from cosmic radiation. These radioactive isotopes were scattered during the flood. This would preclude any accurate dating of antediluvian fossils by radioactive isotopes. The AAOEC assumes that large quantities of radioactive isotopes existed in the interior of the Earth in order to have it being 4.5 billion years old. Salvatores and Prunier have an extensive discussion of the usage of high energy neutrons and protons to transmute radioactive wastes (pp. 116-120). They propose that this will help solve the problem of disposal of radioactive waste. It is evident that both neutrons and protons in sufficient quantity and with sufficient energy levels can "speed up" radioactive decay. This demonstrates that the fission decay rate is not as fixed as some would claim. The AAOEC usually retorts that these high energy neutrons and protons do not occur in sufficient quantity in nature to change the decay rate. Perhaps they do not occur at the present time, but it is possible that past events could have produced increased numbers of these particles. Neutrinos are indirectly detected by the nuclear fission they produce. Anything that produces increased numbers of neutrinos would increase the rate of fission of radioactive isotopes in the Earth.

Third, this system assumes there is neither contamination of the rock[222] by outside sources nor loss of the daughter isotopes[223] by some means. It is evident that this has occurred in many specimens. Shipman, Wilson, and Todd discuss this problem with regard to several radioactive decay processes (pp. 707-709). AAOEC scientists will dismiss any anomalous age[224] determined by radiometric means and claim it was contaminated, but ages which agree with their preconceived age of the Earth will be accepted as valid. This seems to be what David G. Smith is saying:

> It is important that the products of the decay process, the 'daughter' nuclides,[225] should be retained in the rock. The

[222] This is usually called the parent isotope.
[223] The isotopes generated by radioactive decay.
[224] Age not in harmony with the 4.5-billion-year age of the Earth given by AAOEC.
[225] A nuclide is an atom of a specific isotope, characterized by the constitution

> more daughter nuclide that is lost since the formation of the rock the younger it will appear to be. On the other hand allowance may have to be made for the original presence in the rock of a proportion of daughter nuclide other than that produced by radioactive decay. (p. 394)

If the sample does not have enough of the daughter nuclide (daughter isotope) to fit their preconceived age for the sample, they will assume it has lost some of the daughter nuclides. If the sample has too much of the daughter nuclide, they will assume the daughter nuclide was present in the original sample. How convenient! Hayatsu states:

> In conventional interpretation of K-Ar age[226] data, it is common to discard ages which are substantially too high or too low compared with the rest of the group or with other available data such as the geological time scale. The discrepancies between the rejected and the accepted are arbitrarily attributed to excess or loss of argon. (p. 974)

The whole system of radiometric dating is both subjective and circular (the geological time scale is used to calibrate the radiometric time scale which is used to calibrate the geological time scale)! Cf. Fox, 2024, Appendix V.

Fourth, this system assumes that the initial value of some radioactive isotopes of some elements were equal to 0 at time t = 0 (the beginning). With the decay of iodine 129 into xenon 129 Allegre and Schneider admit that xenon 129 existed at the beginning of the Earth.

> Xenon 129 arose as the result of nucleosynthesis[227] before the earth and solar system were formed. It was also created from the decay of iodine 129, which does not exist on the earth anymore. This form of iodine was present very early on but has died since, and xenon 129 has grown at its expense. (p. 69)

How does the writer know how much xenon 129 ($_{54}Xe^{129}$) existed at the beginning of the solar system? How does he know that all the xenon 129 in the mantle of the Earth

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of its nucleus (i.e. by its atomic number and its mass number).

[226] K = potassium and Ar = argon.

[227] Nucleosynthesis is the production of a chemical element from simpler nuclei (as of hydrogen), especially in a star.

decayed from iodine 129 ($_{53}I^{129}$)? These assertions are nothing, but pure assumption!

Fifth, a number of other isotopes are known to exist naturally (without being of radiogenic[228] origin). Driscoll states:

> However, some strontium 87 exists naturally – not as a result of rubidium 87 decay.) … What complicates things for the uranium-lead method is that nonradioactive lead 204, 206, 207 and 208 also exist naturally, and scientists are not sure what the ratios of nonradiogenic to radiogenic lead were early in the moon's history. (p. 12)

If these nonradiogenic isotopes of lead existed on the Moon, how can one say they did not exist on the Earth? The isochron method[229] of dating is based upon this assumption. The isochron method is based upon the assumption that meteorites have the same ratio of the isotopes of lead (lead 206 and 207) as the Earth. The reader should note that AAOEC recognize that meteorites have different isotopic ratios for other elements than the Earth. The AAOEC reject meteorites that have ratios that do not conform with their assumed age of the Universe – how convenient! Brush states:

> The isochron method is self-checking in the sense that if the group of rocks selected does not yield a straight-line plot, then one knows they were not formed at the same time and can reject them. (p. 35)

Sixth, they assume that some of the daughter isotopes did not exist at the beginning of the Universe and that others existed. This is essential to their system. If large amounts of any of the daughter isotopes existed naturally, the whole system is flawed and cannot be used. Since xenon 129 $_{54}Xe^{129}$ (a daughter isotope) existed, how can one say that thorium $_{90}Th^{234}$ did not exist at the beginning of the Universe? This system of dating demands that this assumption be true, but they cannot prove it!

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[228] Originating from radioactive decay.

[229] Rocks assumed to have been formed at the same time and with the same isotopic ratios.

Seventh, most of the radiometric dating of rocks is done on igneous rocks[230] and not on sedimentary rocks. Dott and Prothero state: "Because most datable minerals containing radioactive elements originate in igneous rocks, the bulk of isotopic dating has been confined to such rocks." (p. 103)

Eighth, Wells admits that assumptions have been made in radiometric dating which cannot be proven:

> Absolute age determinations of points on the geological time-scale, based on radioactivity, are generally accepted as the best approximations now known, even though they rest on a series of assumptions,[231] any one of which may be upset at any time. At present there is no means of confirming or denying the accuracy of these determinations by independent methods. (p. 948)

Wells is proposing that the growth rings in corals be used to confirm the accuracy of radiometric dating (cf. p. 206 for a more thorough discussion of this method).

Under the heading "*Absolute dating*" an atheist – Raup states:

> The use of radioactive isotopes in geologic dating has many problems. The methods are inexact and contain many sources of error. In order for the system to work, the parent isotope must enter the rock in the absence of any of its daughter products, and the accumulation of daughter products must be contained in a closed system so that there is no leakage of daughter products out of the rock or migration of indistinguishable isotopes into the rock after it is formed. Furthermore, the half life of the radioactive isotope must be well known. The last assumption is apparently on firm ground, but the others are always subject to problems and errors. This means that a series of dates run on a single rock may produce quite different results, … Of all the methods, probably carbon 14 is the least dependable. (*Scientists confront creationism,* p. 155)

Raup summarizes the problems with the radiometric dating of rocks in this quote.

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[230] Rocks formed by the solidification of magma.

[231] *Begging the question* – MRF.

How Does Radiocarbon Dating Work?

Scientists who use radiocarbon to date organisms make several assumptions. *First*, these scientists assume that the amount of radiocarbon in the atmosphere is constant (at equilibrium). This assumption is widely recognized to be false. *Second*, scientists assume that the rate of decay of radiocarbon is known. Scientists assume radiocarbon decays at a rate of which 1/2 the radiocarbon decays in 5,730 ± 40 years. This is called the half-life of the radioactive isotope. The expression ± 40 is the standard deviation[232] that means that there is a probability of 68% (0.68) that it decays between 5,690 and 5,770 years – if this is a normal (bell) curve. *Third*, scientists assume that nothing has changed either the amount of radiocarbon ($_6C^{14}$) or non-radioactive isotopes of carbon ($_6C^{13}$ or $_6C^{12}$). Based upon these assumptions the ratio of radiocarbon to non-radioactive isotopes of carbon at the time the organism was alive is calculated (really it is extrapolated from these assumptions). The ratio of these isotopes is measured in the fossil and the age of the fossil is calculated. If one or more of these assumptions is untrue, the whole system of radiocarbon dating is flawed.

Radiocarbon is created by at least two separate means which were discussed in Chapter 6 (high energy neutron and/or proton bombardment of the upper atmosphere [cf. p. 71]). The prior discussion about radioactive decay rates in this Chapter helps to determine one reason why radiocarbon dating is flawed.

Radiocarbon Dating of Fossils

It is widely accepted that the amount of radiocarbon in the atmosphere fluctuates considerably from year to year. This creates problems with radiocarbon dating of short-lived life forms (annual plants) which could have considerably different amounts of radiocarbon than a plant growing the year before. Trees (long-lived plants) tend to have radiocarbon levels, when

[232] A statistical term.

taken – on the average – that are more stable. This might explain why short-lived plants found in the same tomb have considerably different radiocarbon ages.

> Shaw offers ten dates on reeds and halfa grass from Theban Tomb 157, that of Nebwenenef, which can be dated to the first 17 years of Ramesses II, i.e. 1304-1287 BC. These dates have a calibrated C14 range of 1610-820 BC. (Newgrosh, 91/92, p. 62)

The amount of radiocarbon in aquatic environments tends to be different than in other environments.

> The major reservoir of ^{14}C, the deep ocean, contains significantly older CO_2, so that marine organisms show an anomalous age, about 300-500 years too large in most coastal waters. The older ^{14}C component can be followed up through the food chain and human populations whose main source of protein is from the sea should also have an older date for their bone collagen. This is actually the case. (Hedges, p. 700)

Keith and Anderson (pp. 634-636) discovered that Mollusk shells can have anomalous radiocarbon ages.

> Evidence is presented to show that modern mollusk shells from rivers can have anomalous radiocarbon ages … Consequent errors of shell radiocarbon dates may be as large as several thousand years for river shells … The most noteworthy feature of the results is that the analyzed modern mollusk shells from river environments … give uncorrected radiocarbon ages in the range of 1010 to 2300 years.

In order to explain this age anomaly Keith and Anderson (p. 634) say:

> The observed carbon-14 deficiency of modern freshwater mollusk shells and of continental waters has been explained mainly in two different ways: (i) as a dilution effect resulting from the incorporation of inactive carbon from limestones and other rocks (I, 2, 9-12), and (ii) as a fractionation effect attributed to biological and exchange processes, including the rate of exchange of CO_2 across the air-water interface (7-9, 13, 14).

Hedges points out that snail shells have anomalous ages: "Terrestrial snail shells, for example, appear to contain carbon up to a thousand years older than the vegetation they feed on." (p. 701) Riggs found even greater errors in radiocarbon dating of snails:

> In the cases where the magnitude of ^{14}C deficiencies is unknown or underestimated, the potential for misdating is extreme. For instance, if the ^{14}C depletion in Big Spring were attributed entirely to hard water effect, shells from the spring would date at least 22,000 years too old. Since there is no limit to the size of reservoir deficiencies, the potential for misdating, particularly of samples from arid areas is also unlimited. (pp. 60-61)

Rubin and Taylor discuss the errors in dating living clams and snails from freshwater environments. "These deficiencies correspond to errors of approximately 800, 2000, and 3000 years." (p. 637) Errors of this magnitude cannot be ignored! Errors of this magnitude call into question the integrity of the whole process of radiocarbon dating.

Radiocarbon dating of certain charcoal deposits in England are off by 1000 years out of about 2600 years. This is a significant error in the dating process.

> During the 1952 excavations on the settlement site adjacent to the south bank of the Durrington Walls Henge Monument, a well-preserved mass of wood charcoal was found … Two radio-carbon tests on a sample from this charcoal were made … the results were … indicating a date of c. 2620-2630 BC for the charcoal … This date is archaeologically inacceptable … we cannot accept the Durrington Walls radio-carbon date, which is roughly a millennium too high! (Piggott, pp. 289-290)

Dort discusses the errors in using radiocarbon dating techniques to give the ages of seals in Antarctica.

> Therefore, radiocarbon dating of marine organisms yields apparent ages that are older than true ages, but by an unknown and possible variable amount. Therefore, the several radiocarbon ages determined for the mummified

> seal carcasses cannot be accepted as correct. For example, the apparent radiocarbon age of the Lake Bonney seal known to have been dead no more than a few weeks was determined to be 615 ± 100 years. A seal freshly killed at McMurdo had an apparent age of 1,300 years. (pp. 210-211)

This gives another example of inherent errors in radiocarbon dating techniques. The assumption that the value of the radiocarbon at t = 0 is known is disproven by these cases.

Nunez and Walker discuss the errors in dating grape remains which were found in Spain: "the matter in hand concerns discrepant radiocarbon dates for palaeobotanical samples obtained during excavation of a sealed Eneolithic ['copper age'] deposit in southeast Spain." (p. 905) These discrepancies relate to dates of some of the remains appearing to be modern, rather than ancient. This appears to be either an example of contamination of the material by outside sources or a drastic discrepancy in radiocarbon content!

Newgrosh (91/92) states that the dating of the same mummy had variations of over 300 years. "Now consider the dates for the mummy of Ramesses II. Gif-4018, a sample from under the heel, has a calibrated radiocarbon age of 1340-1370 ± 70 BC. Gif-4019, a sample from in the abdomen, has a calibrated age of 1030-1100 ± 70 years BC." (p. 62) There was no evidence that this mummy had been rewrapped with younger cloth. Certainly, there are inherent errors in radiocarbon dating.

The radiocarbon dating of certain artifacts has been "corrected" and the dates have been drastically reduced.

> Radiocarbon dates on cobs long believed to be among the earliest cultigens[233] in the New World make it necessary to question the standard 5000 BC date for maize domestication … A similar adjustment several years ago accompanied direct age determinations on human bones thought to some to be 11,000 to 70,000 years old but found to be no older than 8,000 years. (Fritz, G., p. 305)

This is a drastic change in the "absolute age" of these artifacts!

[233] Cultigen is a cultivated plant that does not grow wild.

Fritz complains that textbooks continue to assert that these artifacts are older in spite of the overwhelming evidence proving they are not as old as formerly claimed.

> Chronologies for the adoption of maize agriculture north of Mexico have been revised accordingly … For some reason, however, the old Mesoamerican sequence persists unchanged in new editions of textbooks … and in recent volumes and articles devoted to aspects of domestication. (Fritz, G., p. 305)

This author still takes strong issue with the usage of radiocarbon to date these artifacts because of the points made in this chapter.

In cold climates wood might remain preserved for centuries without decay. If this wood is used for fuel, the usage of charcoal from the fire to date things would give incorrect dates for the time of the fire. It is possible that antediluvian wood that had no radiocarbon was preserved in the glacial ice (or in other places) and was used by postdiluvian man for fuel. This would give erroneous dates for the time of the fire that burnt the wood.

The basic assumption that the amount of radiocarbon is at equilibrium (cf. Libby, p. 98) is demonstrated to be in error by the first seven incidents (and possibly the eighth and tenth incidents). This disproves the steady state (equilibrium) assumption of the radiocarbon dating methodology. These ten incidents are from different organisms and from different parts of the Earth which give evidence of widespread anomalies in radiocarbon dating. Equilibrium occurs when the amount of radiocarbon being produced is equal to the radiocarbon decaying.

In addition, there is evidence that the decay rate of radiocarbon is not as fixed as once thought. Dudley says: "The ß$^-$ emitters ^{14}C, ^{60}Co, and ^{137}Cs have had their decay characteristics altered." (p. 2) This brings another factor into the question of whether or not radiocarbon dating is a valid technique for dating anything. Anderson claims that the decay rate of radiocarbon does not follow the Poisson distribution

(for the decay to be analyzed by the statistical methods used here it must follow this distribution).

> *Assuming the absence of artifactuality, at least under the two cited conditions of measurement-the desorbing*[234] *monolayers and the (positively) charged monolayer-surface systems, the ß emissions detected by external counters positions adjacent to the adsorbed*[235] *carbon-14-labeled monolayers are not properly described by the Poisson distribution.* (p. 3612)

The decay rate must follow the Poisson distribution in order to use statistical techniques to determine the decay constant.

Fudge Factors[236] Are Used in Radiocarbon Dating

While the scientists who use radiocarbon, dating do not use the term "fudge factor," this is precisely what they do with their data.

> A key aspect of the procedure in both laboratories is the addition of a selective dissolution step, which removes potential contamination. Diagenetic processes can add insignificant amounts of carbon with high $^{14}C/^{12}C$ ratios to corals, but selective dissolution techniques can remove such natural contaminants … We were also concerned about potential inaccuracies in ^{230}Th ages. Corals with ages that are known independently, from annual growth bands and ^{14}C dating, demonstrate that ^{230}Th ages are accurate for carefully selected samples younger than 8000 years old. However, some corals older than several tens of thousands of years have initial $^{234}U/^{238}U$ ratios greater than modern marine values. Thus, exchange of uranium may have occurred after skeletal growth. (Edwards *et al.*, pp. 963-964)

Edwards speaks of removing potential contamination from the samples. How do they know how much contamination entered

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[234] Desorb is to remove (a sorbed substance) by the reverse of adsorption or absorption.

[235] Adsorption is a process in which molecules or ions of one substance cling to the surface of another substance.

[236] An arbitrary mathematical term inserted into a calculation in order to arrive at an expected solution.

the sample? It looks like they assume an age and remove enough of the "contaminants" to give the preconceived age for the sample! A careful scrutiny of the writings of those who explain their techniques reveals that they calibrate the radiocarbon dating by the uranium/thorium dating technique, then calibrate the uranium/thorium dating technique by the radiocarbon technique. Their whole line of reasoning is *circular*!

It is possible that archeologists have used fudge factors in their radiocarbon dating of the early Americans.

> But alas! There are flaws even in this cleverly contrived radioactive calendar. Bone absorbs very little carbon 14, and yet on the ancient camping places, bones are the major evidence left behind by the lost Americans. Teeth and tusks do absorb carbon 14, as does wood, even in the form of charcoal. In some of the earliest experiments, laboratory technicians needed a pound of teeth or a pound of ivory to derive a carbon 14 date. Even if we had found a skeleton of a Folsom man, it is doubtful if a pound of teeth could be gathered to be dated. Even in deeply buried charcoal pits carbon 14 might be leached out by percolating water. The tiniest root hair mixed with ancient charcoal would be part of a living plant with modern carbon 14 in it. This root hair would produce a date much too modern. Charcoal heavily leached by draining waters produces a date much too ancient …
>
> Even with these drawbacks and pitfalls, however, archaeologists and laboratory technicians began to hammer out the exact history of the earliest Americans. The dates badly out of line were disregarded…
>
> The early workers were amazingly accurate in their guesses as to the antiquity of the earliest American hunters. (Hibben, pp. 139-140)

Hibben almost admits that the archeologists found the dates they were looking for in their radiocarbon dating. They disregarded dates that were out of line with their preconceived ideas. Hedges also states:

> Acceptance of radiocarbon dates, although once highly controversial, is now quite general, but even so material is often submitted for dating in the spirit of adding a scientific precision to the archaeologists' pre-existing beliefs. (p. 700)

This is bad science, or better stated, not science at all (cf. Fox, 2024, Appendix V)!

Archaeologists have a bad habit of selecting the radiocarbon dates that are in harmony with their preconceived ideas and rejecting the dates which contradict their preconceived ideas.

> Quite a different approach was adopted by Callaway and Weinstein in 1977. They produced a radiocarbon-based chronology for Early Bronze Age Palestine but noted the great difficulties in reconciling the high dates produced by calibrated radiocarbon dates normally adopted by historians and archaeologists. As many as 25 of their 55 Early Bronze Age radiocarbon dates had to be selected out of the study, a 45% rejection rate which they described as 'quite disappointing.' (Newgrosh, 91/92, p. 59)

Newgrosh (91/92) continues: "A generation of archaeologists have lived with radiocarbon dates by picking and choosing – some they will accept, others they will reject: is this habit to continue?" (p. 67)

Radiocarbon Calibration by Dendrochronology

The radiocarbon dating system is calibrated by the tree-rings of several different species of trees; bristlecone pines, redwoods, and oaks. These rings go back for around 2,000 years (bristlecone pine trees go back about 4,000 years). In order to go back earlier it is necessary to find wood from trees that lived before the time of the oldest living bristlecone pine tree. The rings of these dead trees are "overlapped" (correlated)[237] with the rings of living trees to extend the chronology back in time. There are several problems with this method. *First*, one should not expect similar sequences of growth rings from trees of a different species. *Second*, the growth rings are expected to be different for the same species

[237] I remind the readers that correlation is a necessary condition (but not a sufficient condition) for cause-and-effect.

that are growing in different areas. *Third*, young trees of the same species grow wider rings than older trees (the outer rings are narrower than the inner rings). This makes correlation of the different rings more difficult. *Fourth*, many trees grow more than one ring in one year and others do not grow a ring some years. *Fifth*, the growth rings of all trees should differ when they exist in different areas (one in North America, another in Ireland, another in Germany, etc.). Krebs developed master chronologies for four Colorado stands of bristlecone pine trees. Krebs states:

> The low level of correspondence among the master chronologies prohibits the merging of the four separate chronologies into one. The validity of merging chronologies over extensive geographic areas for dendrochronologic purposes is questioned. Results of this study refute generalizations made in a previous study of the Mt. Goliath bristlecone pine stand. (p. 149)

If different stands of bristlecone pines in the state of Colorado cannot be correlated, how can one expect to use the bristlecone pines to correlate the oak trees (a different species) in Ireland and Germany (a great distance from Colorado)?

Picture 1 - Marion Fox with Utah bristlecone pine tree

They date the radiocarbon by the tree-rings, then date other tree-rings by the radiocarbon (cf. Stuiver *et al.*, pp. 969-979).

> In dating tree-rings the precision of this laboratory, and that of Groningen and Heidelberg, approaches the limit set by the faithfulness of the record in individual trees. This record can, however, produce ambiguous calendar dates from a single radiocarbon date. (Hedges, p. 700)

Baillie states:

> The master tree-ring chronologies of the last *two* millennia, … are absolutely correct. They form a perfect calendar and were produced using robust chronology building techniques. Replicated, high-precision, radiocarbon activity measurements made on precisely dated samples drawn from these various chronologies make up the internationally accepted calibration curve for the

> conversion of radiocarbon dates into true dates for this time period. (p. 30)

This is *circular reasoning,* and it is unsound. All the errors of radiocarbon dating that have been unveiled in this chapter should be considered before it is ever used. Radiocarbon has so many problems that it only gives a relative age (it shows that one thing is probably older than some other thing) and the relative age is not ironclad!

The dating by tree-ring chronologies has brought about a crisis in the interpretation of ancient events by both historians and archaeologists. Newgrosh (89/90) discusses this problem extensively (pp. 37-41). This crisis is similar to what would occur if an accepted dating system dated the American Revolutionary War as occurring in 1861!

Pyle discusses the Minoan volcanic eruption and cautions:

> There is a problem with the dating of the Minoan eruption which may never be resolved. Direct radiocarbon dating has so far yielded a large scatter of dates that can, at present, be interpreted according to one's prejudice. Indirect methods (acidity peaks, tree-rings) are beguiling, being potentially more precise but at the same time highly ambiguous, and should only be treated with utmost caution. (p. 90)

There are several problems with the usage of dendrochronology (tree-ring dating). LaMarche and Harlan state:

> Large dating errors could occur when a long tree-ring chronology is developed through the cross dating of overlapping series that are relatively short. For example, two series, each 1000 years long and representing the same time period, could conceivably be mismatched in such a way as to result in an erroneous 'chronology' nearly 2000 years long. (pp. 8854-8855)

LaMarche and Harlan claim that these dating errors did not occur in the case of the bristlecone pine trees of the Campito Mountain chronology. The dating technique employed was to use statistical techniques to cross-correlate the tree-rings.

Their living trees only date back to about A. D. 600. In several instances of constructing the chronology they had fewer than 10 specimens to use in the statistics. It is widely known by those who have studied statistics that there are few statistical techniques that are valid with this small of a population. They state:

> The calendar dates assigned to annual rings of trees have traditionally been given in absolute terms with no explicit recognition of any uncertainty in the date. The reasoning is that, if cross dating is carefully done and if a large number of tree-ring specimens are studied, the possible error is nil. This may not strictly apply in the present case because of the relatively small sample sizes involved and the unusually great length of the bristlecone pine chronologies. (pp. 8856-8857)

LaMarche and Harlan reveal the statistical method they employed:

> Linear product-moment cross correlation coefficients were computed for 100-year subperiods beginning with the subperiod centered at 4700 M. The analysis was first carried out by using the dates originally assigned to the Campito chronology. The resulting coefficients are negative or have low positive values prior to the most recent subperiod. (pp. 8855-8856)

Lamarche and Harlan adjusted the dates by inserting "missing data" into the calculations.

> When the Campito dates are adjusted by insertion of the two "missing" rings, the cross-correlation coefficients for the entire period are positive and highly significant … Correlation Analysis thus verifies the adjustments made in the Campito chronology. (p. 8856)

They claim that they were justified in their insertion of the missing data because the results were "highly significant" statistically. In some instances, the rings were only two or three cells in width and these rings were discarded and not used in the correlation analysis.

> In bristlecone pine the boundary between latewood of one ring and earlywood of the next is almost invariably sharp,

> with no evidence of gradation in cell size or wall thickness. The rare exceptions occur where extremely low average growth rates have produced sequences of rings only two or three cells in width. However, because growth rings are difficult to identify in such intervals, they are normally discarded for dating purposes and do not represent an important source of uncertainty in tree-ring dates. (p. 8850)

How many rings were discarded and not used in the statistical analysis? Is this practice commonplace in dendrochronology? Is this justified?

In cases in which the trees supposedly grew at the same time for several hundred years the correlation was not done for the whole period in which the growth was contemporaneous, but it was broken into short segments (a small sample-size). Why was this done? Was the correlation positive for the whole period in which the trees grew simultaneously? Is this valid?

This author questions the validity of dendrochronology because (1) they discard information, (2) insert "missing" information, and (3) they employ a sample-size that is so small that it makes the correlation have to be quite large in order to have any meaning (to be statistically significant). With regard to the insertion of "missing" rings into the statistical process, this author agrees with Gladwin: "To include missing rings would merely correlate the opinion of the operator, not the evidence of actual tree-growth." (p. 7)

Other Sources of Radiocarbon

Other sources of radiocarbon have been discovered in the past few years. Atomic bombs and nuclear reactors are sources.

> Inadvertently, the atomic bomb tests of the late 1950s and early 1960s have yielded valuable geophysical information. The bomb tests added substantial amounts of radiocarbon to the natural background ($^{14}C/^{12}C \approx 10^{-12}$), leading to maximum tropospheric concentrations around 1964. (Joos, p. 181)[238]

[238] This is why radiocarbon dates (BP) are dated before 1950.

Another possible source of error in the radiocarbon is the fossil fuels (particularly coal) which are burned produce non-radioactive isotopes ($_6C^{12}$ and $_6C^{13}$) which fall to the ground great distances from the coal-fired plant. These sources of non-radiocarbon are potentially contaminating influences in the carbon cycle (carbon is cycled from plants to animals and back to plants). It is the ratio of carbon 14 ($_6C^{14}$) to carbon 12 ($_6C^{12}$) that is used to determine the "age" of the fossil. If extra amounts of carbon 12 ($_6C^{12}$) are added to the cycle, this will make the fossil to appear older[239] than its real age.

Another reason why radiocarbon is not at equilibrium is the decaying magnetic field of the Earth allows a greater number of particles (neutrons and protons) from the solar wind to create more radiocarbon. This makes artifacts appear older than they really are because of the erroneous assumption that radiocarbon has been at equilibrium for millions of years.

Volcanoes produce large amounts of CO_2 that is mainly composed of carbon 12 ($_6C^{12}$) rather than carbon 14 ($_6C^{14}$). "Volcanic gases have produced false radiocarbon dates over 100 years too old in modern plants from Thera." (Lasken, p. 68) These anomalous ages at Thera (Greece) are noted by other scientists. Lasken cites a number of examples of anomalous ages from plants growing near volcanoes or other sources of carbon dioxide. In Italy, Saupe, *et al.* measured

> … living plants (trees, bushes and reeds) and volcanic emanations have been sampled and their ^{14}C content measured. All present-day plants are depleted in ^{14}C, giving a fictitious age different from 0 (1805, 1820, 2540, 4350 years BP). (p. 525)

This has also occurred in other parts of the Earth:

> An over-estimation of ages measured by ^{14}C methods can occur in plants grown in a volcanic environment, even at a solfataric[240] stage, because part of the atmospheric CO_2 is of volcanic origin and contains no

[239] Coal was produced during the flood and consequently it had very little radiocarbon ($_6C^{14}$).

[240] The solfataric stage is the stage of a volcanic eruption during which only gases are emitted from the vent.

> ^{14}C. The dilution of atmospheric CO_2 by volcanic CO_2 can be considered as a natural ^{14}C dilution. It was previously noted for Hawaii. (Saupe, *et al.*, p. 530)

Scientists have obtained anomalous ages in the area of Eifel, Germany.

> Investigations … on the possible influence of volcanic CO_2 on plant material have been reported before. They show that active volcanism as well as volcanic gaseous emanations may lead to considerable pseudo ages in archaeologic or recent material … The influence of "dead" CO_2 on the plant material samples causes 'pseudo ages' up to 1500 years … exceeding the usual uncertainty due to global ^{14}C variations. (Bruns, *et al.*, pp. 532 and 534)

Anomalous ages for plants have been found in Russia.

> In areas of recent volcanism the plants capture volcanic carbon dioxide, devoid of C^{14} as well as atmospheric CO_2. As a result there is a decrease in radiocarbon concentration in recent wood. The apparent radiocarbon age of such recent wood comes sometimes to 6000 years. (Sulerzhitzky, p. 85)

Sulerzhitzky found that the "tendency towards an older radiocarbon age as the result of capture of volcanic carbon dioxide by plants can take place over large areas in regions of young volcanism." (p. 93) This leads one to the conclusion that wide-spread volcanic activity (which probably occurred immediately after the flood) would upset any radiocarbon dating of the organisms.

There was a radiocarbon anomaly which occurred the year after the Tunguska Valley impact in Siberia (1908). Brown and Hughes state: "the ^{14}C anomaly that is said to have occurred in 1909 … the ^{14}C activity was higher in that year than normal and deviated from the mean by over two standard deviations." (p. 513) Brown and Hughes claim that a cometary impact would generate enough energy to form neutrons with sufficient energy to cause the radiocarbon anomaly:

> We conclude, therefore, that within the uncertainties of the effect of chemical composition on collective plasma acceleration processes and on collisional neutron

> production, the number of neutrons expected in the Tunguska impact, as scaled from solar flares, is in remarkably good agreement with the radiocarbon data requirements. (pp. 513-514)

If impacts can generate enough neutrons to create radiocarbon, it is possible that other radioactive isotopes would be generated by neutrons formed by cometary impact. If the impact of bolides could create radiocarbon, then radiocarbon would not provide a valid mechanism for dating anything. Since radiocarbon is also generated by solar protons (Lingenfelter and Flamm, pp. 134-140), it is also possible that bolide impacts could generate enough energy to create radiocarbon by protons.

Even lightning can produce radiocarbon.

> In the present communication we discuss ^{14}C production in thunderstorms and show that its present-day magnitude may be a few percent of ^{14}C production by cosmic rays, so that hundred-year fluctuations in the frequency of thunderstorms could explain the short-term secular variations in radiocarbon in tree-rings. (Libby and Lukens, p. 5902)

If lightning were not produced until after the flood, this would make radiocarbon dating even more erroneous.

Variations in cosmic rays, both solar and galactic, would affect the rate of ${}_6C^{14}$ production. These rates could be normal variations or from sources such as supernovas.[241] These variations, linked with Earth's decreasing magnetic field, would greatly affect the production of radiocarbon (${}_6C^{14}$).

Summary of Problems with Radiocarbon Dating

There are a number of difficulties with the usage of radiocarbon to date artifacts. The production of radiocarbon is quite variable for a number of reasons. *First*, the decay rate is not known with any degree of accuracy. *Second*, there are good reasons to believe that the antediluvian environment

[241] Exploding stars.

prevented the production of radiocarbon. *Third*, radiocarbon comes from several different sources (the solar wind, cosmic rays, lightning, meteorite impact, etc.). *Fourth*, volcanoes injected large amounts of non-radioactive carbon ($_6C^{12}$ and $_6C^{13}$) into the atmosphere for several centuries after the flood.

Several other problems arise after the radiocarbon has been generated. *First*, radiocarbon tends to be diluted by limestones and other rocks. *Second*, some organisms tend to reject one isotope of an element in favor of another isotope. This process is called fractionation. *Third*, the carbon in the fossil tends to be contaminated by water that leaches out the carbon in the fossil. *Fourth*, water tends to transport some carbon into the fossil. *Fifth*, various reservoirs have discordant amounts of radiocarbon.

It must be noted that radiocarbon dating techniques are far from exact. Radiocarbon dating requires extrapolation of the data. Students of mathematics should remember that it is dangerous to extrapolate data when the variables are unknown.

Geologic Formations Which Cannot be Explained with Uniformitarian Assumptions

Regions called "overthrust" as mentioned previously display characteristics that cannot be explained by uniformitarian assumptions. These overthrust regions have "old rock" on top of "younger rock." The forces required to move these vast layers of rock are astronomical. Indeed, these layers of old rock should have been broken and fractured into small pieces as they moved over the young rock. The curvature of the Earth should have caused these layers of rock to bend enough to cause them to fracture into small pieces. Kitcher objected to "Flood Geology" by saying: "So, for example, the questions I have raised can be just ducked. These are 'the exceptional cases.'" (p. 133) Kitcher should admit that his system of uniformitarian geology and macroevolution have many notable exceptions. The overthrust is one that is virtually impossible to occur with his system but is easily explained by

the flood. Overthrusts of a few hundred feet are possible, but overthrusts of several miles are impossible without totally fracturing the rocks. With respect to overthrusts the AAOEC should answer four questions. *First*, would an overthrust of continental proportions disprove their system? *Second*, if not what would disprove their system? *Third*, how large would an area of overthrust need to be to disprove their system? *Fourth*, how did they arrive at their answers to these questions?

There are at least two geologic formations that could not be formed by uniformitarian methods. Anticlines and synclines[242] cannot be formed from rock that has hardened. The rigidity of hardened rocks is such that the rocks would fracture and fragment instead of bending as is the case with anticlines and synclines (Figure 12). The rocks found in anticlines and synclines must have been folded while they were plastic[243] and before they hardened. This is easily explained by the flood.

Figure 12 Syncline - New Mexico, USA

[242] Synclines are a troughlike downward fold of rocks underlying the earth's crust.

[243] Capable of being deformed continuously and permanently in any direction without rupture.

Figure 13 Syncline - Arbuckle Mountains - Oklahoma, USA

Figure 14 – Anticline – Utah, USA

Figure 14

How does the AAOEC explain the anticlines and synclines? Holmes theorizes a characteristic of rocks that he calls "Rheidity" (pp. 202-ff.).

> A rheid differs from a liquid in being below its melting-point and in having a certain amount of strength. It flows in virtue of the relatively long duration of the deforming stress. (Holmes, p. 203)

Holmes uses ice as an example of rheidity (p. 204). It should be noted that when pressure is applied to ice it will melt the ice and when the pressure is removed the ice will refreeze almost instantly. For example, if a block of ice is in a room that is below freezing ($t < 32°$ F or $t < 0°$ C) and two weights are attached to a wire which is placed over the block of ice and hung to the sides of the ice, it will cut through the ice and the wire with the attached weights will fall to the floor. The ice

will refreeze behind the wire as the wire passes through the ice because of the pressure caused by the weights on the ends of the wire.

> Carefully conducted experiments have shown that for liquids which expand on freezing, such as water, increasing the pressure lowers the freezing point. The effect is very slight, however, because it takes a pressure of 1500 lb./in.^{2} to lower the freezing point of water 1° F. An increase in pressure of 1 atm lowers the freezing point by only about 0.007° C. (Harris, *et al.*, p. 355)

The analogy of ice deforming does not prove that brittle rock will bend! *First*, the ice deforms at or near its melting point, but the AAOEC is not postulating that these rocks were near their melting points when they were bent. This is another reason to reject this analogy. *Second*, this applies to: "… liquids which expand on freezing …" and most rocks do not expand upon freezing. This author heard one AAOEC use glass as an analogy (glass windowpanes will supposedly flow downward and thicken at the bottom of the pane in window panes that are several centuries old). Zanotto (1998) says: "… window glasses may flow at ambient temperature only over incredibly long times, which exceed the limits of human history." (p. 392) The AAOEC geologist thinks that time will cure all of his problems in explaining how things occurred. Holmes says:

> A rheid differs from a liquid in being below its melting-point and in having a certain amount of strength. It flows in virtue of the relatively long duration of the deforming stress. (p. 203)

Third, another problem with this theory of rheidity is that it is absurd to think that layers of rocks composed of different materials would all bend at the same rate. It is necessary for them to bend at the same rate because if each kind of rock did not bend at the same rate it would cause some of the rocks to fracture while others bent. *Fourth*, another problem is in providing a force that remains constant for literally hundreds of millions of years that can bend a rock. Earthquakes take only a few minutes to move rocks; changes in isostasy (cf. pp. 175-176) occur on the order of a few hundred years (a few thousand years at most). When the AAOEC gives up:

"substantive uniformitarianism (cf. p. 19), he cannot claim there has been extensive catastrophism (cf. Raup) without giving up this rheidity of rocks. Rheidity is based upon *substantive uniformitarianism* and is incompatible with *punctuated uniformitarianism*.[244] The AAOEC can adopt the explanation of the theist and reject rheidity.

Geologic Phenomena That Cannot be Explained with Uniformitarian Assumptions

There are at least eight phenomena that cannot be explained if the Earth is billions of years old and uniformitarian assumptions are correct. The reader should be aware that there exist more than eight phenomena which cannot be explained by the AAOEC geologist.

The *first* phenomenon that cannot be explained with uniformitarian assumptions is the natural oil seepage that occurs. Petroleum is thought to be millions of years old by uniformitarian geologists. Geologists claim: "… that 80 to 90 percent of the presently discovered oil is found in Mesozoic and Tertiary rocks." (Wilson, Monaghan, Osanik, Price, and Rogers, p. 864) The Mesozoic period supposedly began about 225 million years ago and ended about 65 million years ago. The Tertiary period supposedly began about 65 million years ago and ended about 2.5 million years ago. "Within this range the best estimate for present marine seepage worldwide is on the order of $.6 \times 10^6$ metric tons per year." (Wilson, *et al.*, p. 857) If this rate of seepage continued for 100 million years, it would have a total seep. of 0.6×10^{14} metric tons. But this is just half of the period that the oil was supposed to be in the sedimentary rocks.

The *second* phenomenon that cannot be explained with uniformitarian assumptions is the natural gas seep that occurs through the crust of the Earth. Natural gas tends to migrate upward because it is under great pressure and because of the permeability of the rocks. Without this

[244] The catastrophism proposed by Gould, Raup, Alvarez, and others.

permeability the natural gas cannot be extracted from the rock. There is no reason for natural gas to remain in the natural gas reservoirs for millions of years. If the AAOEC answers this argument by either saying that this phenomenon or the first phenomenon has a source of replenishment of the petroleum or natural gas, he must accept the theory of hydrocarbon formation of Thomas Gold (cf. Osborne, pp. 39-54) or another similar theory.

The *third* phenomenon that uniformitarian geology cannot explain is a reversal of the direction of the Earth's magnetic field. The AAOEC claims that the magnetic field of the Earth has changed polarity a number of times. Because of the decay of the field, he is either forced to make this claim or accept the fact that the Earth is only a few thousand years old. The AAOEC is forced to claim that a sudden catastrophe caused the field to reverse its polarity.

The *fourth* phenomenon that cannot be explained by uniformitarian geology is the presence of rings around several of the planets (Jupiter, Saturn, Uranus, and Neptune).

> It seems like a radical idea: instead of forming with Saturn 4 ½ billion years ago, the planet's resplendent rings are really less than 100 million years old … Two processes argue that the rings are short-lived. First, Saturn's moons exert gravitation tugs on the ring system and are stealing orbital energy from the myriad small particles it comprises. As particles lose momentum, they slowly spiral toward Saturn … Another process acting to bring about the rings' demise is the constant pelting they endure from cometary dust grains. These high-velocity projectiles erode larger ring particles, and the collisional residue is more easily drawn toward Saturn – again implying a lifetime of only 100 million years. Furthermore, because comet dust is as black as coal, adding only a small amount of it to the rings would make them very dark. Yet Saturn's B ring displays bright particles with surfaces of pure ice, implying that they have not been exposed to comet dust for very long. (Anonymous #18, *Sky & Telescope*, pp. 245-246)

It is evident that Jupiter, Saturn, Uranus, and Neptune are

either quite young (a few thousand years old) or they have not experienced slow and uniform processes that have shaped them. Uniformitarian assumptions are not true in many areas of the field of astrophysics! The phenomena that have occurred are of the nature that this author contends occurred in Genesis 6-9. This provides another answer to the dust cloud theory of dinosaur extinction (cf. p. 88). If the solar system passed through a massive dust cloud, then either rings of Saturn would be darkened by the dust, or they (the rings) would have begun since the extinction of the dinosaurs.

Fifth, the plate tectonics theory of geology (the system presently espoused by most AAOEC) has the geologic activity to be concentrated along the boundaries between the plates. This assumption is not true because there are many areas, near the middle of a plate, that are quite active (such as the Hawaiian volcanoes, seismic activity in China, etc.).

Sixth, some fossils are in several layers of the rocks – called polystrate fossils. A number of fossils have been found extending through several feet of strata.[245]

> Workers at the Dicalite division of Grefco Inc. have found the fossil skeleton of a baleen whale some 10 to 12 million years old in the company's diatomaceous earth quarries in Lompoc, Calif. … The whale is standing on end in the quarry and is being exposed gradually as the diatomite is mined … the fossil may be close to 80 feet long. (Reese, p. 40)

Because the whale is standing on end in the rocks it is evident that the rocks were laid quite rapidly. This proves that over 80 feet of sediment was laid in a short period of time. Even if the rock was tilted after it was laid down, the thickness of a whale demonstrates that several feet of sediment were laid down rapidly (without the whale being destroyed by scavengers or other factors).

In addition, Geikie states:

> It is not uncommon in certain Carboniferous sandstones to

[245] These are called polystrate fossils.

> find huge sigillarioid[246] and coniferous trunks imbedded in upright or inclined positions. Where, as in Fig. 227, the trees actually grew on the spot where their stems remain, it is evident that the rate of deposit of the sediment which entombed them must have been sufficiently rapid to have allowed a mass of twenty or thirty feet to accumulate before the decay of the wood. (p. 654)

Geikie has a number of drawings of both upright trees and tree stumps (pp. 650 and 654-655). Stutzer has a number of pictures of both upright trees and tree trunks (pp. 144-149 and 167). Rupke (1969) also discusses tree fossils:

> For a long time, the Carboniferous sequence of Nova Scotia has been known for its upright *Lepidodendrales.*[247] Fossil upright *Calamitaceae*[248] are also present. The fossil upright trees are found in both sandstone and shale beds, although more commonly in the former. Occasionally, an upright tree may pass through an alternating sandstone-shale series. Usually, the trunks are in a state of excellent preservation. Their height varies from less than a meter to as much as several meters. The beds with upright trees often contain *Stigmaria,*[249] sometimes spread through the entire thickness of the bed. In both stigmarian beds on Cape Breton Island, well-preserved upright trunks have been found. (pp. 2111-2112)

Any time a fossil is in several feet of rock it proves the rock was laid rapidly because the remains of plants and animals will decompose or be eaten by scavengers if it is exposed. Even burial in a few feet of soil will bring about decomposition. Fossil preservation requires rapid burial and solidification of

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[246] A sigillaria is a lycopsid tree of the Devonian and Carboniferous whose height averaged about 20 meters (66 feet), with some specimens as high as 34 meters (112 feet); it had a crown of large pods on a slender, branchless stalk.

[247] Lepidodendrales are an order of Devonian and Carboniferous woody fossil plants of the class Lycopodineae, characterized by dichotomous branching in both the crown and rootlike supports.

[248] Calamitaceae: an extinct order of arborescent Carboniferous spenopsids; they were reedlike plants that grew to 30 meters (98 feet) in height and 30 centimeters (12 inches) in diameter.

[249] Stigmaria is a genus of lycopsid underground axes, part of the same plant whose trunks is called Lepidodendron; extant in the Carboniferous period of uniformitarian geology.

the rocks in which the fossil is buried. When "an upright tree may pass through an alternating sandstone-shale series" (Rupke, 1969, p. 2111) it proves that both the shale and the sandstone were laid in a short interval of time (probably within a few days or a few months at most). These trees would rot if they remained exposed for several years. It is evident that

> … *solid* trees become rotten stumps before they become protected against further decay by surrounding sediment, it is hard to see how the hollow bark tubes from the Carboniferous could resist decay and be perfectly well preserved to a height of sometimes many meters - unless protected by rapidly deposited sediment. (Rupke, 1970, p. 2536)

Another interesting thing about the fossils on Cape Breton Island is:

> It is not uncommon to find *Stigmaria* specimens filled with sediment different from the surrounding rock. The filling may be sandstone and the bed may be shale, or the reverse. (Rupke, 1969, p. 2111)

Broadhurst gives evidence of rapid sedimentation:

> In 1959 Broadhurst and Magraw described a fossilized tree, in position of growth, from the Coal Measures at Blackrod near Wigan in Lancashire. This tree was preserved as a cast, and the evidence available suggested that the cast was at least 38 feet (*11.6 meters – MRF*) in height. The original tree must have been surrounded and buried by sediment which was compacted before the bulk of the tree decomposed, so that the cavity vacated by the trunk could be occupied by new sediment which formed the cast. This implies a rapid rate of sedimentation around the original tree.
>
> Since this particular tree at Blackrod was described, more than fifty trees fossilized in position of growth have been observed in Lancashire, mostly on opencast coal workings. These trees are found at various horizons between coal seams, and they occur, also, in partings within coal seams.

> Where trees occur in the roof beds of a coal seam the root system is developed in the beds above the top of the coal; in no case has a tree been observed to pass from the roof into the coal itself … It is clear that trees in position of growth are far from being rare in Lancashire … and presumably in all cases there must have been a rapid rate of sedimentation. This sedimentation occurred, without doubt, in water that could not have been fast-flowing since the trees are left in standing position. It is possible that the land surface with its trees was inundated by flood water (possibly on numerous successive occasions). (Broadhurst, pp. 865-866)

These fossil trees cannot be explained by uniformitarian geology but can be explained by the biblical flood as set forth in this treatise (FFM). These trees were probably transported by the flood waters in upright positions and then covered by the sediment as the waters rose. This follows because the root systems of the trees do not pass through the coal seams, which would occur if the trees grew in soil immediately above the coal seam. Coffin states that trees are commonly found in upright positions while floating:

> The erect floating of tree stumps has been reported by several observers. Masses of floating plant debris including erect stumps were seen off the coast of New Guinea … Ager … told of palm trees standing upright in deep water … stumps will float upright in deep water especially if the roots enclose earth or rocks. A vertically floating log has been seen for years by park rangers in Crater Lake, Oregon. Upright logs and stumps sometimes become a hazard to boat travel in Puget Sound. (Coffin, 1983, p. 298)

These trees were transported with pebbles enclosed in their roots because of

> … the occasional appearance of pebbles within the coal beds. These pebbles were floated into the coal swamp, as will be shown in another place, held by the interlaced roots of trees. (Stutzer, p. 143)

The mechanism postulated by this author (FFM) would have successive overflowings of the waters by the tidal actions brought by the planet Mercury that would carry these trees and after the tidal waters flowed outward with each tide

would deposit them on the land, where they would sink into the sediment, to be covered with the next tidal action.

Dunbar and Rodgers state:

> In the Coal measures of Nova Scotia, for example, the stumps and trunks of many trees are preserved standing upright as they grew, clearly having been buried before they had time to fall or rot away. Here sediment certainly accumulated to a depth of many feet within a few years. In other formations where articulated skeletons of large animals are preserved, the sediment must have covered them within a few days at the most. Abundant fossil shells likewise indicate rapid burial, for if shells are long exposed on the sea floor they suffer abrasion or corrosion and are overgrown by sessile organisms or perforated by boring animals. (p. 128)

The atheist Raup admits that polystrate fossils are evidence of rapid deposition of sediment.

> … *polystrate fossils*. … The creationists point out, probably correctly in most cases, that the occurrence of a long tree trunk in life position suggests extremely rapid deposition of the surrounding rock. Otherwise, the tree trunk would have decayed and disappeared before it could be embedded. (March 1983, p. 17)

Raup admits that the AAOEC have ignored this evidence:

> Many of the examples of catastrophism now being cited by the scientific creationists were well known, but either ignored or given very secondary importance in nineteenth century geology and paleontology. (March 1983, p. 21)

Raup includes a picture of a 7 ½ foot (2.3 meters) tall upright polystrate fossil tree as evidence of rapid burial. He states: "The fossil is a clear indication of rapid burial and this sort of preservation is surprisingly common in the geologic record." (March 1983, p. 22) He is surprised because he is an atheist!

Seventh, the AAOEC has no suitable mechanism for the uplift of the continents. The large amounts of marine fossils on the continents suggest that these regions were under water at some time (the time of the deposition of the sediments). This

is easily explained by a tidal flood of the type postulated by this author (the FFM). There are two basic types of rocks: sialic (less dense rock) and simatic (more dense than sialic rock). The various densities of the rocks have been measured by the usage of seismographs. The speed of seismic waves varies with the density of the substance through which it travels. In conformity with the principle of isostasy (cf. p. 175) the lighter rocks float in the heavier magma (denser molten rock). In order to rise above the ocean floor from which the AAOEC claims the marine sediments came, it was necessary for light rocks to be deposited on the bottom (called roots or cratons) of the continents. Kennedy states:

> Given an Earth with sialic continents floating in a denser simatic substratum, what mechanism would cause a large volume of low standing continents to rise rapidly a mile in the air? Furthermore, evidence from gravity surveys suggests that the rocks underlying the Colorado plateau are in isostatic balance, that is, this large area is floating at its correct elevation in view of its mass and density. Recent seismic evidence confirms this, … We have then a double-ended mystery, for the Colorado plateau seems to have grown downward at the same time that its emerged part rose upward … To date, the only hypothesis to explain the upward motion of large regions like the Colorado plateau is that of convection currents. Slowly moving convection currents in the solid rock, some 40 to 50 kilometers below the surface of the Earth, are presumed to have swept a great volume of light rock from some unidentified place to have deposited it underneath the Colorado plateau. A total volume of approximately 2,500,000 cubic miles of sialic rock is necessary to account for the uplift of the Colorado plateau. While it is not hard to visualize rocks as having no great strength at the high pressures and temperatures existing at depths of 40 to 50 kilometers, it is quite another matter to visualize currents in solid rock of sufficient magnitude to bring in and deposit this quantity of light material in a relatively uniform layer underneath the entire Colorado plateau region. … Even more troublesome than the method of transporting all this light rock at shallow depths below the surface of the Earth

> is the problem of its source. The region from which the light rock was moved should have experienced spectacular subsidence, but no giant neighboring depressions are known. A lesser but large problem is how such enormous quantities of light rock can be dispersed so uniformly over so large an area. (pp. 494-495)

This same problem exists in other parts of the Earth, such as the Tibetan plateaus with an area of 750,000 square miles (requiring about 25,000,000 cubic miles of light material being deposited under the plateau, according to Kennedy, p. 494). This principle is easily illustrated by a swimmer holding on to a partially inflated life preserver. The swimmer sinks in the water to a greater depth than he would if the life preserver was fully inflated. The lighter air lifts the swimmer out of the water.

Eighth, the AAOEC must not only explain how the continents were uplifted, but he must explain how they were uplifted then lowered to allow for the deposition of marine fossils then uplifted and lowered repeatedly. In many instances, one layer of rock is composed of marine fossils and the next layer is composed of terrestrial fossils. If the AAOECGM is true, this requires repeated uplifting (above sea level) and lowering (below sea level) of the continents. How did the cratons get simatic rocks on the bottoms of the cratons to submerge them (below sea level) and then get sialic rocks on the bottom of them to raise them above sea level? Where is the evidence of these alternating layers of sialic and simatic rocks on the cratons?

How Do Scientists Date Things?

There are two basic systems of dating things. The *first* system is called relative dating. Relative dating is illustrated by a person going to a cemetery and finding a tombstone with the inscription "John Jones son of William and Elizabeth Jones," with the inscription born 1710 and died 1793, and finding tombstones for William and Elizabeth Jones in the same family plot, but with no date (the dates having been worn off). The exact dates of the births and deaths of William and

Elizabeth Jones are unknown, but one would properly reason that they were born before 1700 and that they probably died before 1793. This is relative time, but some relative time is not linked with any known time as in this example. The *second* system is absolute time. Absolute time is based upon some system such as the Earth's revolution around the Sun or the Earth's rotation on its axis – this assumes that the revolution and rotation are constant. The geologist has derived measures of relative time from his assumption that organic macroevolution (cf. Appendix D) has occurred. David G. Smith states:

> Correlation on the basis of climatic changes is particularly important for Quaternary[250] stratigraphy where climatic changes have evidently taken place much more rapidly than the organic evolution on which correlation depends for other periods. (p. 392)

AAOEC frequently will write or say, "the Earth is 4.5 billion years old" or some other figure with this order of magnitude. What evidence do they offer for this claim of an age of 4.5 billion years for the Earth? In fact, most of the time it is just an assertion without any evidence to support the claim. Various things are dated as being millions of years old without a single bit of evidence.

What about the proof that man has been around for one million years or more? Is there historical evidence for this assertion? Willard F. Libby, who won the Nobel prize in 1960 for his work in radiocarbon dating, was seeking a source to validate his dating technique. Libby said:

> We had a decay curve drawn which predicted with no unknown factors, no adjustable constants, the specific activity of ancient mummies. And so the question was to see whether it worked … The research consisted of two stages. The first shock Dr. Arnold and I had was that our advisors informed us that history extended back only 5000 years. We had thought initially that we would be able to get samples all along the curve back to 30,000 years, put the

[250] Quaternary: The period in uniformitarian geology which runs from the end of the Tertiary to the present time.

> points in, and then our work would be finished. You read books and find statements that such and such a society or archeological site is 20,000 years old. We learned rather abruptly that these numbers, these ancient ages, are not known; in fact, it is at about the time of the first dynasty in Egypt that the last historical date of any real certainty has been established. So we had, in the initial stages, the opportunity to check against knowns, principally Egyptian artifacts, and in the second stage we had to go into the great wilderness of prehistory to see whether there were elements of internal consistency which would lead one to believe that the method was sound. (pp. 105 and 107)

Libby admits that there is no evidence for a date earlier than about 3,000 BC. This is approximately the date of the flood. This author wonders how they arrived at the date of 3,000 BC. (Perhaps this date was derived from the Manethan histories of Egypt.) In reading a number of history, anthropology, geology, and astronomy books this author has failed to find very many that give a dating technique. When they do it is usually based upon either uniformitarian geologic assumptions (slow sediment deposition which requires long time periods) and/or radiometric dating.

With regard to dating of Egyptian history Rohl states:

> In 664 BC ASHURBANIPAL, king of Assyria, brought an army to Egypt and sacked the sacred city of Thebes … This date of 664 BC is supported by a whole network of interlocking data supplied by various independent sources, including BEROSUS, Manetho, and the Assyrian and Babylonian chronicles, Apis stelae and Egyptian regnal dates from the monuments (p. 119) … the sacking of Thebes by ASHURBANIPAL in 664 BC – our earliest genuinely fixed date in Egyptian history. (p. 138)

Rohl admits that the earliest date truly known is 664 BC. Rohl also makes convincing arguments for the dating of events which demonstrate that the early date of the exodus of Israel from Egypt (circa 1450 BC) is the most reasonable date. His arguments should be studied by those who love the truth.

In dating the age of the Moon uniformitarian assumptions are

made in spite of the admission by many scientists that the cratering of the Moon was evidently catastrophic.

> Ages can be assigned to the geologic units of the Schrodinger Basin by means of the density of superposed small craters, the superposition of the units themselves, and their relation to various swarms of secondary craters … The cumulative crater frequency per square kilometer lies slightly below that for the Orientale Basin, except for a few craters larger than 30 km in diameter. From these data alone, Schrodinger would appear to be slightly younger than Orientale. (Shoemaker *et al.*, p. 1853)

This dating of the Schrodinger Basin is based upon the density of the craters. It is assumed by the geologist dating the Schrodinger Basin that the number of meteors impacting the Moon is constant (there were no cataclysmic events).[251] It was established in this book that the Moon was impacted during Genesis 6-9 with extensive numbers of objects (mostly ice particles) and was cratered extensively during this time. The AAOEC are in a catch-22 situation[252] in that many have accepted catastrophism in geology (cf. p. 18) but they continue to cling to dates derived from uniformitarian assumptions!

AAOEC date the rocks, Earth, Moon, planets, Sun, Universe, historical artifacts, etc. by means which are supported by assumptions which have not been established. Gayle Fritz discusses the dating of maize:[253]

> Because the maize from central Mexico was dated in the same manner as that from Tamaulipas – by arbitrary excavation levels grouped by zones – perhaps its age has likewise been more assumed than demonstrated. (p. 306)

If their basic assumption is false, the whole system of dating is unsound.

> And because the higher-order analyses and interpretations depend for their organization upon the early dating of

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[251] They essentially count the total number of craters and observe the number of craters that are formed each year, then they divide the total number of craters by how many craters are formed each year to determine the age of the Moon – these are uniformitarian assumptions.

[252] A problematic situation for which the only solution is denied by a circumstance inherent in the problem.

[253] The American Indian (native [indigenous] Americans) word for field corn.

> cultivated plants, the final results are inevitably thrown into question. (Fritz, G., p. 307)

The dating of the supposed reversal of the Earth's magnetic field was linked with uniformitarian geologic assumptions.

> The discovery of a reversal of Earth's magnetic field whose date could be fixed at 700,000 years ago was used to set the relationship between depth and time for ocean sediment cores by assuming a constant[254] sedimentation rate. (D. Hartmann, p. 302)

Officer and Drake state:

> Although the time scale of magnetic reversals is no better in absolute time than the faunal, radiometric, or other clocks against which it is calibrated, if a particular reversal event can be identified in two sections, then we know that the ages of the reversal intervals are simultaneous to within approximately 10^4 years[255]. (1983, p. 1381)

The reader should note that Officer and Drake state that the magnetic reversals are "calibrated[256] by faunal,[257] radiometric, and other clocks.[258]"

Another way that scientists date the Earth is by varves. A varve is a series of successive layers of sediment. It is thought that the layers are laid down with first the coarse grain sediment being laid by fast moving water during the summer and the fine grain sediment being laid down during the winter (when the lake is covered by ice). The dating of the ice ages by varves is based upon several assumptions. *First*, it is based upon the assumption that there is only one coarse grain layer, and one fine grain layer deposited each year. Shelton states:

> There are a few sequences of strata-notably some Pleistocene lake deposits in middle-latitude North America and Europe, some Eocene shales in Wyoming, and some Permian evaporites in Texas-whose thin cyclic laminations

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[254] Note the uniformitarian assumption here (MRF).
[255] 10,000 years.
[256] Note the circular reasoning here.
[257] Index fossils.
[258] Possibly the depth of the sediment.

> are believed to represent seasonal variations in accumulation … Variations from year to year often permit sequences of varves to be matched from one deposit to another. However, like the analogous tree-rings, these sequences are extremely limited from the geological point of view because they represent such short time spans – rarely more than a few hundred years at any one locality – and such special, localized conditions. Also, at some localities there is uncertainty about the annual origin of the layers. (pp. 304-305)

Second, the whole system of dating by varves is based upon assumptions (estimates) when they have no real data:

> The record of retreat of the last ice sheets in Europe and America has been traced by means of varves. Unfortunately, there are gaps in the records that can be filled in only by estimates. In Scandinavia a connection with the present has been established and the varve chronology, with certain portions estimated, extends from the present to about 10,000 to 15,000 years ago. In North America the varve chronology, again with some estimated[259] portions, reaches back some 20,000 years. In view of the uncertainties and imperfections of the method, it is impossible to say exactly how far back continuous varve records go. (Stokes, p. 19)

Third, dating by varves is calibrated by radiometric methods – note the circular reasoning here. Cloud states:

> Older varves yield year-by-year records for limited parts of the geologic column, but not ages. Actual ages in years before the present (BP) for these and other truly ancient rocks can be obtained only from methods involving radioactive decay. (p. 83)

Refer to pp. 372 through 374 for additional discussions on varves.

All Dating Techniques Travel the Radiometric Dating Road

Prior to the introduction of radiometric dating techniques, the ages of the rock formations were dated (by nearly all

[259] One wonders what assumptions the AAOEC made here.

uniformitarian geologists) at least one order of magnitude less than they are now dated.

> Many of the geologically recent sequences of events on earth, including the evolution of man and other metazoan life, were deciphered in detail in the last half century by systematic techniques, especially an understanding of geometric interrelations of minerals and rocks, the correlation of strata by mapping, and the use of index fossils.
>
> In contrast, conclusions regarding the rates and dates of most earth events, their worldwide correlation, and the sources of the earth's enormous internal energy were largely intuitive, and erroneous, prior to the discovery and understanding of the radioactivity of the earth. (Engel, p. 458)

The reader should note that Engel admits that the dating of rocks was "largely intuitive, and erroneous." This is an illuminating admission by an AAOEC. He is saying they were just guessing or following their intuition, but now they have a technique that absolutely dates things (radiometric dating techniques). Their intuition was guided by their worldview, materialism. The worldview of materialism demands that the explanation of the existence of living organisms be explained by purely materialistic methods (organic macroevolution and uniformitarian geology).

Radiocarbon dating techniques have been flawed from the beginning, yet many archeological finds have been re-dated by radiocarbon.

> The radio-carbon dating measurement of burnt wood from the Nutbane Long Barrow … has recently been completed … This charcoal has given the satisfactory and interesting Carbon-14 date of 2721 ± 150 BC, a date which, … must assign our Windmill Hill cultures to a rather earlier position than that in which we have been accustomed to place them. (Vatcher, p. 289)

Many artifacts have been re-dated by radiocarbon techniques.

The Moon rocks found by the Apollo astronauts were dated by

radiometric dating techniques. "The ages of lunar rocks derived from the various methods of dating (e. g., rubidium-strontium, potassium-argon, and lead-uranium-thorium ratios)." (Burgess, p. 97)

The dating of the evidence that is used to prove that the Earth's magnetic fields have reversed is radiometric.

> The first quantitative time scale for reversals was achieved in 1963 by measuring the ages (using the potassium-argon technique) and the magnetic polarities of young volcanic rocks. This work appeared to confirm earlier paleomagnetic results from undated sedimentary rocks which indicated that all polarity intervals were of nearly equal length. (Cox, p. 239)

Butler reveals how magnetic reversals were dated:

> A Pliocene-Pleistocene geomagnetic polarity time scale based primarily on K-Ar[260] dating and paleomagnetic polarity determinations on igneous rocks is given in Figure 9.2 (p. 211)[261] … Analytical uncertainties that are inherent in radiometric dating generally limit application of this "dating and polarity determination" technique to the past 5 m.y.[262] At an absolute age of 5Ma,[263] the typical error in radiometric age determination approaches the typical duration of polarity intervals … Paleontological dating of sedimentary horizons is required to determine geologic ages, and correlation to a radiometrically dated polarity sequence is required to estimate absolute ages within individual deep-sea cores. (p. 213)

These quotes prove the dating of the geomagnetic field reversals is based upon radiometric techniques ("it is correlated to a radiometrically dated." [Butler, p. 213]). In fact, the dating cannot go back more than 5 million years. One might ask how the geophysicist can date things older than 5 million years by geomagnetic field reversals. The answer is that the spreading of the seafloor is extrapolated backwards for 5 million years (by their dating technique) and then the

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[260] Potassium and argon (MRF).
[261] Butler's Figure is not included in this Volume.
[262] Million years.
[263] Million annum (million years).

rate of the spread is extrapolated backwards in time (cf. Butler pp. 215-216). They used linear extrapolation techniques to determine the "ages of polarity chrons[264] in the Paleogene were predicted by the assumed constant seafloor spreading rate of the South Atlantic Ridge." (Butler, p. 218) Cores that were dated by the fossils in the cores (Butler, p. 218) were then drilled into the ocean floor and the chrons were dated by the fossils (index fossils). The whole system is based upon substantive uniformitarian (cf. pp. 19-20) geologic rates. If substantive uniformitarianism is untrue, this whole dating system is unsound. This follows because the sediment deposition rates are based upon substantive uniformitarianism.

The reader should note how the sedimentary rocks were dated by the radiometric technique. The dates of the field reversals were calibrated by radiometric dating techniques. "However, after being calibrated against known points on the radiometric time scale for reversals, the profiles provide a nearly continuous record of polarity intervals." (Cox, p. 241)

Radiometric dating was used to date human bones (a skull) in China. "Our early work on U-series dating assigned the age range of 230-300 kyr[265] to the layer VI where the skull was found." (Tiemel, p. 55) The reader should note that the layer of soil was dated by radiometric dating techniques, then the skull was dated by the layer of soil in which it was found. Radiometric dating was used to date teeth and jaw fragments from Spain (Holden, p. 735). Holden makes the following interesting statement: "Andy Currant of London's Natural History Museum warns that it will be difficult to pin down a date. Uranium dating becomes unreliable beyond 350,000 years." (p. 735)

Radiometric dating was used to date the time of the glaciers (cf. Denton and Hendy, pp. 1434-1437). Two different ice-cores were drilled in the Greenland ice caps in 1992 by European and U.S. scientists.

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[264] Chrons = a time interval of geomagnetic polarity.
[265] Kyr = kiloyears = 1,000 years.

> Bleary-eyed after counting and recounting 15,000 layers, they discovered that the climate shifts occurred in less than a decade and that the shifts occurred approximately 1,000 years earlier than previously estimated from ice cores. Although such layer counting has credibility problem, at the Summit site Alley *et al.* were able to circumvent difficulties that plagued other ice core sites. The ^{14}C timescale[266] over the deglacial period has been calibrated recently using The/U/^{14}C measured in corals and extended ^{14}C tree-ring chronologies. (Fairbanks, 1993, p. 495)

While Fairbanks is asserting that radiometric dating was used (probably referring to the European ice core), Alley *et al.* claimed that isotopes (radiometric) dating was only used for the first 300 years of the dating (p. 528). Alley *et al.* list dust layers etc. as the dating techniques of the remainder of the ice. Alley *et al.* list radiometric dating for the European ice core at other depths (p. 529). In addition, uniformitarian assumptions are made of the rate of snow falling that supposedly caused the glaciers to form. This author has no doubt that snowfall forms some glaciers (mountain glaciers) at the present time, but this does not prove that glaciers of continental proportions were formed by this mechanism. Certainly, snow does contribute to the thickness of the glaciers in Greenland and Antarctica in some way, but the contribution is probably minimal. As one goes deeper into the ice caps it becomes increasingly difficult to discern "annual rings."

> Air bubbles in ice provide information on the gaseous composition of the atmosphere at the time the bubbles were formed. In the upper parts of ice sheets, annual layers can be identified. Deeper into the ice, and thus farther back in time, the ice becomes compacted and stretched out as the ice flows away from the accumulation regions toward the regions where the ice sheet melts or breaks off into icebergs at a marine boundary. (D. Hartmann, p. 210)

There is no doubt that some of the so-called annual layers of the ice caps were deposited by the snow that fell in the last 4,500 years (since the flood).

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[266] Radiocarbon = ^{14}C.

Some of this dating is done by the ratios of one stable isotope to another stable isotope. For example, oxygen 16 and oxygen 18 are both stable and because of the greater mass of oxygen 18 it will tend to concentrate in lower levels of the hydrosphere, atmosphere, etc. It is dangerous, if not erroneous, to use these ratios when the impact of cosmic ice would change the ratios of these isotopes. Hsü states:

> A large input of cometary carbon should also significantly alter the isotopic composition of calcareous sediments in the ocean. The isotopic composition of carbon for meteorites and for the Earth's mantel has about the same composition of -6 to -7‰ ^{13}C.[267] However, the carbonate in meteorite and the carbon in chondrite have very heavy ^{13}C, with values up to more than +50‰ … the nucleus of a comet may have represented a distilled fraction, it should have an isotopic composition much lighter than that of the average meteorite. (1980, p. 202)

Burchfield admits that radiometric dating is the only method used by uniformitarian geologists. Under the heading "Measuring the Age of the Earth" he says:

> Ultimately, however, the problem always reduced to one of finding a reliable geological or cosmic clock. Some phenomenon had to be identified which could be readily quantified and measured, and which could be shown to vary regularly with time. Today the decay of radioactive elements is universally regarded as the only phenomenon which meets these criteria. (p. 12)

This is an admission that radiometric dating is the "only game in town" for the AAOEC.

Why is Radiometric Dating so Important?

Lord Kelvin assumed the Earth began as molten rock and calculated the age of the Earth from the time required to lower the temperature of the molten rocks to their present temperature (cf. Burchfield, pp. 6-7). Allegre states:

> Kelvin … estimated the time it took to cool the terrestrial

[267] The symbol ‰ means per thousand (MRF).

> surface from 2,000° C or 1,000° C to today's 25° C, taking account of the heat flow that the Earth generates. The resulting figure was 100 million years, which agreed with the result of a similar calculation he had made for the sun. He therefore concluded that the Earth and the sun were formed at the same time, about 100 million years ago … Around 1880 Krieg and Carl Barus's first precise measurements of the thermal conductivity of rocks led them to reevaluate the heat flow and to lean toward the short chronology. They estimated the age of the Earth as 25 million years, and Kelvin went over to their position. (p. 44) *Of course, this is all based upon uniformitarian assumptions* (MRF).

With the discovery of radiation, the AAOEC, who must have an Earth of several billion years, began to claim it must have large amounts of radioactive materials in the interior because it is over 4 billion years old. The basic argument of the AAOEC *begs the question*. They assume the Earth is over 4 billion years old in order to determine that there are large amounts of radioactive materials in the interior of the Earth, then use that assumption to prove the radioactive materials are in the Earth. What evidence do they have for there being enough radioactive material in the interior of the Earth to keep the core of the Earth molten for 4.5 billion years? There is none! AAOEC admit they are just theorizing that this radioactive material exists; it must exist otherwise the Earth is not 4.5 billion years old. One group of AAOEC says: "In the mantle, the source is probably the radioactive disintegration of long-lived isotopes." (Encrenaz *et al.*, p. 133) Notice how they say **probably**, indicating that they cannot prove this assertion, yet it is essential to their claim of an age for the Earth of 4.5 billion years – they are *begging the question*.

With regard to the heat in the Earth Hapgood says:

> The earth's heat, unfortunately, is another mystery. Formerly it was thought that it originated with the planet, and was greatest in the earth's core. Now it is thought that most of the heat originates from the decay of radioactive materials in the lithosphere, and very little comes from

> greater depths. We have no direct evidence that can settle this matter. It is quite possible that the heat gradient we observe in deep mines, on which our estimates are based, does not extend all the way to the earth's center. If that is true, it will pull the rug out from under many of our ideas. (1970, p. 22)

What Hapgood is saying is that the "old Earth theory" demands that the heat not increase with depth.

One problem with the claim that radioactive isotopes cause the heat is the question of where these isotopes are located. Are they in the core[268] of the Earth? Are they in the lithosphere (the outer layer)? Why are heavy elements in the outer crust of the Earth and not in the core of the Earth? Heavy elements (uranium, thorium, etc.) should sink in the molten rock and lighter elements should rise from Archimedes' Principle.[269] If these radioactive isotopes are confined to the crust and lithosphere, how is the convection current of magma able to move the continents apart? How can the convection currents bring heat from the core of the Earth when the heat is being generated by the isotopes in the lithosphere, which is higher than the core? This flies in the face of the physical processes that cause convection currents!

Another problem with the claim that radioactive isotopes cause heat in the Earth is pointed out by Kennedy.

> Inasmuch as radioactive, heat-producing elements are associated with sialic rocks, one might expect heat flow through the thicker parts[270] of the Earth's crust to be greater than through the thinner parts[271] of the Earth's crust. However, as a first approximation, heat flow through the crust of the Earth is approximately the same through continents, mountain ranges, and ocean basins. (p. 493)

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[268] The current theory of the nature of the Earth is that the core is solid and not molten.

[269] From Archimedes' principle it is determined that heavy molecules will sink, and light molecules will rise in either a liquid or a gas.

[270] The continents.

[271] The ocean basins.

Sediment Deposition Rates and Radiometric Dating

The measured sedimentary deposition rates (cf. pp. 49-50) of the oceans invalidates radiometric dating. Two of the basic assumptions of radiometric dating (that both the parent and daughter isotopes have not been disturbed) are untrue. Judson states:

> Inasmuch as we have been talking about the sedimentary aspects of the rock cycle, we should ask how much it takes to complete at least the sedimentary route within the whole cycle. Poldervaart[272] gives the total mass of sediments (including the sedimentary rocks) as 1.7×10^{18} tons. Taking the annual production of sediments as 10^{10} tons, then one turn in the sedimentary cycle approximates 1.7×10^{8} years. At the present rates then we could fit in about 25 such cycles during the 4.5 billion years of earth history. (pp. 372-373)

What Judson is saying is that the sedimentary rocks could have been recycled at least 25 times during the Earth's history. If Judson's calculations are correct, these rocks should be recycled in 170 million years. The advocates of plate tectonics claim these rocks are recycled by subduction.

How is it possible to have sedimentary rocks that are over 1 billion years old when they are recycled every 170 million years? The AAOEC have made *ad hoc* assumptions. This reveals one of the contradictions of AAOEC dating methods. Even the 170 million years is based upon substantive uniformitarianism (cf. p. 19) which is being rejected by many AAOEC geologists. The reader should remember that 170 million years (based upon substantive uniformitarianism) is the maximum age that one should expect sedimentary rocks to have.

Even if it is assumed that the whole crust of the Earth has been recycled it would have occurred twice in 4.5 billion years. Judson states:

> Accepting Poldervaart's figure of 2.4×10^{19} tons as the mass

[272] Reference omitted.

> of the earth's crust then there has been time enough for a mass equivalent to the earth's crust to have moved two times through the sedimentary portion of the cycle. (p. 373)

If the entire crust of the Earth has been recycled at least twice in 4.5 billion years, it would be impossible to find any rocks that are over 2.25 billion years old. If Judson might be referring to the sedimentary rocks being recycled, but this still does not change the points regarding recycling 25 times.

Reluctance of AAOEC to Accept Evidence

A number of examples could be cited to demonstrate that AAOEC have either falsified the evidence or rejected overwhelming evidence that disproved their theories. Sadly, some theists have been guilty of this same dishonesty! When AAOEC cite as "fact" what they cannot prove, they are irrational. The previous quote of Libby (cf. pp. 296-297) demonstrates that some anthropologists and some historians have been asserting without evidence, and they knew they had no hard evidence!

Fraud is all too common in research. This author has observed that doctoral candidates seldom obtain their degree if their research has negative results. There is pressure to have successful results for all research.

> Fraud is a growth industry … Ethics-watchers, who argue that this situation is a fact of life in academia … the issue of misconduct isn't about to go away … the fraud circuit is booming. (Hamilton, p. 507)

The Piltdown man was discovered to be a fraud:

> With the Piltdown skull, Britain could point to a great contribution to the study of human evolution, … The specimen, known as Piltdown man, occupied an honored place in the catalogues of fossil hominids for the next forty years.
>
> But in 1953, thanks to some rigorous scholarly detective work, Piltdown man was revealed to be forgery, manufactured from modern human and animal remains …

> Moreover the existence of a hoax so subtle and so close to being successful sows the seed of doubt that elsewhere in science some of the foundations of knowledge are anchored in sand. Such doubt fuels the strong impression, much abroad today, that fraud in science has become more frequent. (Tobias, pp. 38-39)

The Piltdown man was used by AAOEC to prove that macroevolution (cf. Appendix D) has occurred.

Roger Poisson falsified much of the data in a breast cancer research project (cf. Grady, p. 104). Other examples can be cited of dishonesty in research, and the reader should always remember that this is a possibility when reading from research that has not been replicated by other independent researchers. Even if the research has been replicated, the reader should always ask what assumptions have been made in the research.

The embryonic recapitulation theory was based upon altered drawings of embryos by Ernst Heinrich Haeckel (1834-1919). One thing that gives good reason to question the honesty of some macroevolutionists is that they still use his altered drawings in some biology textbooks to prove that macroevolution occurs! In addition, they still use other arguments for macroevolution in public school textbooks that have been rejected by the scientific community.

The reluctance to accept evidence disproving their assertions is even more disconcerting. Gayle Fritz states:

> In the meantime, one might conclude that it is rotten luck that all of the 12 directly dated maize cobs and the dated bean pod are younger than 5,000 to 3,500 years old but undated specimens in the Tehuacan assemblages may still be more than 3,500 years old. This seems to be the position taken by writers who either ignore the AMS dates altogether … or refer to them in ways that do not alter scenarios. (p. 307)

This strong reluctance to be truly scientific and follow the evidence demonstrates their bias and creates reasonable doubt about their credibility (cf. Fox, 2024, Appendix V).

Simon LeVay published an article in *Science* in 1991 in which he claimed to have evidence to support the contention that homosexuality is hereditary. This contention and the research that was used to support the contention have been contradicted by several scientists. J. Michael Bailey and Richard C. Pillard also conducted research in which they concluded that homosexuality is genetic (Bower, p. 6). "Two years later[273] a group led by Dean H. Hamer of the National Cancer Institute linked male homosexuality to a gene on the X chromosome." (Horgan, p. 26) Billings and Beckwith discuss several flaws in the research methodology as well as contradictory evidence (pp. 60-62). Horgan states:

> LeVay's finding has yet to be fully replicated by another researcher. As for Hamer, one study has contradicted his results. More disturbingly, he has been charged with research improprieties and is now under investigation by the Federal Office of Research Integrity. (p. 26)

Charles Lyell used deceitful methods to push his theory of uniformitarianism (cf. p. 18). Alvarez *et al.*, say:

> It is a widespread view among geologists that uniformitarianism, as developed by Charles Lyell in the first half of the nineteenth century, provided an essential antidote to biblically inspired *ad hoc* catastrophism in the eighteenth and nineteenth centuries. However Gould (…) has also shown that this interpretation does injustice to the scientific catastrophists. He also points out that Lyell used the rhetorical trick of giving the same name to the very different concepts of substantive and methodological uniformitarianism, in order to push a rigidly gradualistic view of geological processes which can now be seen to be far from correct. (p. 15)

Lyell used a "rhetorical trick of giving the same name to the very different concepts." (Alvarez, p. 15) This is called *equivocation* in logic. It is a deceptive (fraudulent) rhetorical technique.

The fallacy of **equivocation** occurs when the conclusion of

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[273] 1993

> an argument depends on the fact that one or more words are used, either explicitly or implicitly, in two different senses in the argument. (Hurley, pp. 149-150)

Atheism and agnosticism have no objective standard of ethics. Dawkins states:

> In a universe of electrons and selfish genes, blind physical forces and genetic replication, some people are going to get hurt, other people are going to get lucky, and you won't find any rhyme or reason in it, nor any justice. The universe that we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil and no good, nothing but pitiless indifference. (p. 85)

This is precisely what is implied by atheism; there is neither good nor evil. No act is evil, and no act is good. Dawkins admits what atheists and agnostics have been reluctant to admit; there is no objective standard of ethics for the atheists and agnostics. He merely does what he wants to do with no standard. W. O. Stanley quotes Arnold Nash as saying:

> It was moreover claimed that science has obviously failed to solve the problems of the modern world, and confronted with the problem of values it has either remained silent or declared that values were essentially arbitrary and irrational. (Stanley, p. 55)

This is precisely why some atheists and agnostics have no compunction to commit fraud; they have no objective system of ethics. But this is precisely what Paul said would happen when people refuse to have God in their knowledge (Rom. 1:28-32).

In the judgment of this author William James has written one of the best articles on the subject of fraud in science. James states:

> The willingness to commit fraud seems widespread. A recent paper reported that about a third of applicants for gastroenterology fellowships in the United States had misrepresented their academic accomplishments. The misrepresentation included citations of nonexistent articles in actual journals, articles in nonexistent journals and articles falsely identified as "in press". (p. 474)

James summarizes: "Scientific fraud should be regarded as perhaps regrettable, but certainly an ineradicable, interesting and integral part of science." (p. 474) It is quite disappointing that James states that fraud is "perhaps regrettable." Fraud in science is not "perhaps regrettable." It is a disgrace and demonstrates the ethical bankruptcy of atheism/agnosticism!

Do all scientists perpetrate fraud? Certainly not, but it is common and there is pressure to conform to the norm. Conflicting ideas are often swept under the rug and ignored until there is a crisis in science. These quotes (above) are not from the pens of theists, but of atheists, agnostics, and/or skeptics and are from reputable journals. This author could have quoted a number of other sources citing fraud in other areas (the journals contain a number of articles relating to fraud in the scientific community).

Reasons for AAOEC Errors in Interpretation

The atheistic and agnostic worldview is materialism. "Scientific materialism is a philosophical position that claims the material world as the only reality." (Brancazio, p. 894) From this worldview he cannot accept any theistic interpretation, no matter how rational it may be. There are a number of instances in which the AAOEC have "jumped to wrong conclusions" such as Java man, Nebraska man, Piltdown man, Rhodesian man, Orce man, etc.

AAOEC tend to ignore evidence that is contrary to their worldview – they will say that theists also do this.

> In the course of normal science, experiments or observations may reveal *anomalies,* or conflicts with the prevailing theory. At first, anomalies are ignored or allowed to go unexplained, but if they are sufficiently troublesome an *ad hoc hypothesis* may be proposed that adjusts the theory so as to preserve it … A significant number of anomalies may call the validity of a theory into question, but there must be a competing theory available before a "scientific revolution" takes place. (Brancazio, p. 896)

The ignoring of conflicting information is admitted to be common practice. This has been done in a number of areas. This is common in areas which conflict with the AAOEC worldview (age of the Universe, age of the solar system, beginning of life, etc.).

> Modern-day cosmology, with its "big-bang" paradigm, is particularly enlightening because of the existence of significant anomalies – namely, the "missing mass" problem, explained by the *ad hoc* hypothesis of "dark matter," and the discordant redshifts discovered by Halton Arp (largely ignored) that threaten the validity of Hubble's law. At this point, there is no reasonable alternative to big-bang cosmology, so there is no imminent likelihood of a scientific revolution; any additional anomalies that may turn up will probably continue to be dealt with in an *ad hoc* manner. (Brancazio, p. 896)

This author appreciates the candor of the writer (Brancazio) because it reveals what actually occurs in the scientific community. The AAOEC scientist will claim that either the laws of science do not, or did not, apply to a given situation or that there must be other unknown factors (*the anomaly is a special case*) which explain the phenomenon. This is what has occurred with the *dark matter* and the ignoring of other facts.

AAOEC are biased from time to time by their own preconceived ideas, just as any person (including this author) is prone to be biased. Newgrosh states:

> It seems to me that there can be a great deal at stake, especially if you are working on a scientific dating method which will be used to test, or underpin, historically derived chronology. Let us not forget that the ice core scientists first produced a date for the Thera eruption of 1390 ± 50 BC, which was hailed as compatible with the (then) "Egyptian style pottery chronology". Then following the publication of reliable calibrated radiocarbon dates, the ice core scientists actually repudiated 1390, and came up with 1645 ± BC, a date later claimed to be compatible with the 'frost signature' date of 1628-6 BC. Neither the second date nor its compatibility with the "frost signature" date are now generally accepted. (1989/90, p. 38)

An excellent example of the attitude of AAOEC in dealing with the evidence which might contradict their AAOEC worldview is the statements made by Ingalls (p. 14). A number of footprints appear in rocks.

> On sites reaching from Virginia and Pennsylvania, through Kentucky, Illinois, Missouri and westward toward the Rocky Mountains, prints similar to those shown above, and from 5 to 10 inches long, have from time to time been found on the surface of exposed rocks, and more and more keep turning up as the years go by … They look like human footprints … they are found in rocks of the Carboniferous Period and those rocks were laid down about 250,000,000 years ago … the scientist exclaims, "What? You want *man* in the *Carboniferous?* Entirely and absolutely – totally and completely – impossible. We admit we don't know exactly what made the prints, but we do know one agency that didn't, and that is man in the Carboniferous." (Ingalls, p. 14)

The reader should acquire a copy of the article by Ingalls and read a number of other similar statements. The AAOEC has *a priori* determined that man could not have been a contemporary of the dinosaurs.

Another problem with science is that many conclusions are based upon assumptions. Others are merely a choice of several possible explanations of the phenomena being observed. Oldfield discusses this problem with regard to environmental magnetism:

> The very sensitivity of magnetic minerals, as well as their precursors and diagenetic successors, to such a vast range of environmental processes, often leaves open a whole spectrum of possible explanations for the magnetic variations observed. (p. 77)

True science will consider all the possibilities rather than reject *a priori*, without evidence, one or more of the possible options. The AAOEC have rejected the evidence for the existence of God without considering it in many instances. This author has encountered many instances in reading scientific literature where the writer says something like,

"this must be the answer to the problem since the Universe is over 4 billion years old." For example, Sofia *et al.* (p. 18) say:

> Eddy and Boornazian believe the Sun has been shrinking for a hundred years, and perhaps 400 years or more. They believe that because the rate is so fast – at this rate the sun would shrink to zero radius in 200000 years – the shrinkage is temporary and does not apply to the entire solar mass. Noyes told us that the shrinkage must be transitory because we would have already seen geological evidence of any long-term contraction.

Noyes is saying that the Earth is 4.5 billion years old and it would have melted only about 1 million years ago; therefore, it could not have been shrinking at this rate since its beginning.

AAOEC begin with this bias (their AAOEC worldview) which includes several assumptions: (1) the Earth is billions of years old, (2) organic macroevolution is the mechanism that explains the existence of living organisms, and (3) there is no purpose for the existence of anything. Kemp stated:

> Before the early 1970s, most palaeontologists interpreted their fossil record in the light of the prevailing view of how evolution works, the NeoDarwinian, or synthetic theory …
>
> The fact that the fossil data did not, on the whole, seem to fit this prevailing model of the process of evolution – for example, the absence of intermediate forms and of gradually changing lineages over millions of years – was readily explained by the notorious incompleteness of the fossil record. In other words, when the assumed evolutionary processes did not match the pattern of fossils that they were supposed to have generated, the pattern was judged to be "wrong." A circular argument arises: interpret the fossil record in the terms of a particular theory of evolution, inspect the interpretation, and note that it confirms the theory. Well, it would, wouldn't it?
>
> … As is now well known, most fossil species appear instantaneously in the record, persist for some millions of years virtually unchanged, only to disappear abruptly. (p.

66)

The abrupt disappearance of species is exactly what would be expected from the Fox Flood Model. This bias that the Earth is ≈ 5 billion years old is demonstrated by Encrenaz, *et al.* in their discussion of the excess internal energy of three of the Jovian planets.

> In the first case, an estimate of the time required for a planet to cool may be obtained, knowing the current energy excess *L*. … We then obtain the simple result: $\tau = MC_v/(4L)$. For this model to be plausible, the value τ found by calculation must be of the same order as the age of the Solar System, i.e. 5×10^9 years. (pp. 206-207)

Encrenaz, *et al.* will not consider a model that contradicts their worldview that the Solar System is 5 billion years old.

Some AAOEC seem to set out to prove their theories rather than following the evidence in their search for truth. These AAOEC are not "true scientists" because they are not searching for truth. Dott and Prothero state:

> During the 1950s, biochemists developed a theory for the origin of life that has had a profound influence upon geological thinking ever since. That theory, … required an oxygen-free, or **anaerobic**, ocean and atmosphere. Limited experimental results seemed to confirm the inference that complex protein molecules could not have formed if free molecular oxygen (O_2) existed at the earth's surface. Naturally the biochemists then asked if the geologic record supported this apparent requirement. Geologists quickly asserted that, "yes, indeed, Archean rocks bear evidence of anaerobic early conditions." … both chemists and geologists then hypothesized how our present oxygen-rich, or **aerobic**, atmosphere might have developed slowly.
>
> …
>
> Geologic evidence cited for Archean anaerobic conditions may not stand up well to critical scrutiny, and hindsight suggests that perhaps geologists "found" what the biochemists wanted. (pp. 184-185)

If the AAOEC "found" what the AAOEC model demanded in this instance, then it is possible that they have "found" it in other instances (cf. Fox, 2024, Appendix V).

The arguments advanced for the biblical flood have not been rejected because they are not substantive but because they are theistic. Shea states:

> Uniformitarianism guides us in developing and choosing among substantive hypotheses, but the principle itself asserts nothing about nature and is, therefore, not subject to verification or testing. (p. 458)

The AAOEC may have several hypotheses that are "substantive," but he will accept one of them because he is guided by uniformitarianism (cf. p. 18). Merriam-Webster defines "substantive" as: "having or expressing substance." (p. 1174) The AAOEC has not rejected the biblical flood because the evidence contradicts it (it is not substantive), but because it contradicts his worldview. The AAOEC overlooks the evidence against the AAOEC explanation and clings to his theory (materialism) because he cannot, or will not, consider the alternative (theism).

Raup (an atheist) discusses several areas in which creationists are misrepresented under the heading "Arguments Not Made By the Creationists." (March 1983, pp. 17-19) Either the AAOEC misrepresent the creationists ignorantly or they are guilty of deceit. If they are ignorant, they are unqualified to discuss the issue. If they are dishonest, they are unworthy of an audience.

AAOEC are either ignorant or dishonest when they use arguments in lower-level textbooks they know, or should know, are unsound. Raup claims that creationists misunderstand the present-day views of the AAOEC geologist. He states:

> The misunderstanding has been caused in part by the geologists themselves: the nineteenth century idea of uniformitarianism and gradualism still exists in popular treatments of geology, some museum exhibits, and in lower-level textbooks. It is even still taught in secondary school classrooms and one can hardly blame the creationists for having the idea that the conventional wisdom in geology is still a noncatastrophic one. (March

1983, p. 21)

This problem of unsound arguments being used in textbooks is noted by other authorities cited in this treatise (cf. pp. 24, 261, 271, 310, and 384). The fact that this error is still perpetrated in secondary schools gives Christians a good reason to combat it! If the AAOEC case is as strong as they claim, why do they resort to using unsound arguments in these textbooks? Are these textbook writers aware that they are not teaching the truth (dishonest – therefore unworthy of being assigned the role of writing a textbook) or are they ignorant of the views of the scientific community; therefore, unqualified to be writing a textbook?

The AAOEC asserts that the Earth is ≈ 4.5 billion years old so frequently and with such confidence that it makes one wonder if the AAOEC knows something the theist does not know. This author was told of a speaker who was attempting to persuade an audience that he wrote in his notes "weak point, speak loudly, and pound on the podium." The reader should ask himself if the AAOEC has even offered a proof of his assertion or is he just pounding on the podium? If a lie is told confidently and frequently enough, it will be accepted by many people!

Treatment of Those Committing Fraud in Science

Extensive research was conducted in the area of cheating in science in 1974 and the results of being caught cheating are discussed by St. James-Roberts:

> What happened to the intentional biassers? In the vast majority of cases (80 per cent of total), the answers to question 9 was nothing. A qualification frequently included was the response "promoted". Dismissal occurred in 10 per cent of cases and reprimand in 3 per cent. Two percent gave "don't know", while "investigation still in progress", "funding withdrawn", "denied a reference", "demoted", and "suicide" each occurred in less than 1 per cent of cases.
>
> Remembering that these concern only those cases actually detected, the low dismissal rate, high likelihood that

> nothing will happen if IB[274] is detected, and the "promoted" comments together form a considerable inducement. At the risk of biassed interpretation, these data also cast new light on the findings of question 8. Could it be that the relatively high rate of IB reported in senior academic and industrial staff reflects these odds? Perhaps science, like society, sometimes gets the leaders it deserves. (p. 469)

There is very little danger of being punished for intentional bias in science, according to the above quote.

Treatment of Dissenting Colleagues

Being a scientist does not make one either more honest or less honest. Honesty is based upon other factors rather than upon the advanced college degrees one may hold. But one might claim that the pressure from one's colleagues tends to cause the scientist to be honest with his research. This is true, but it also causes another problem; the pressure by predominately AAOEC scientists is to conform to the interpretation of the results of their AAOEC conclusions on the results of their research. The reader should remember that the results of scientific research are frequently subject to several different interpretations (some AAOEC and some theistic). AAOEC colleagues pressure the researcher to interpret it with the AAOEC slant. In addition, articles with a theistic slant are not published in the scientific journals, and in higher education the professor must "either publish or perish." If a university professor, who teaches at a research university fails to have articles published on a regular basis in scholarly journals, he will lose his job.

Burbidge discusses the realities of advancement in the profession of astronomy:

> … advancement depends on judgment by your peers. Thus the important factors for a successful career are your sponsors (where and with whom did you get your Ph.D.); field of research (popular or unpopular); and diplomatic skills (always speak quietly with great conviction, and,

[274] Intentional bias.

> when in doubt, agree with the wisest person present, who by definition must come from one of very few institutions). Look upon new ideas with great disapproval and never discover a phenomenon for which no explanation exists, and certainly not one for which an explanation within the framework of known physics does not appear to be possible. (p. 39)

Of Halton Arp Burbidge says: "Arp would have ranked among the first 20 observational optical astronomers in the world." (pp. 38-39) Burbidge continues by saying:

> A little more than 20 years ago Arp began to devote all his time to extragalactic astronomy … he started to find what he believed were physical associations between some of these galaxies and previously identified powerful radio sources. Soon he found many cases of apparent associations between galaxies and quasi-stellar objects, or quasars.
>
> All of this would have been completely acceptable if the associated objects had the same redshifts, but they did not. Yet Arp believed in the reality of the associations, and, after struggles with referees, his papers were published … Arp's ranking in the "Association of Astronomy Professionals" plunged from within the first 20 to below 200. As he continued to claim that not all galaxy redshifts were due to the expansion of the universe, his ranking dropped further.
>
> About four years ago came the final blow: his whole field of research was deemed unacceptable by the telescope-allocation committee in Pasadena. (pp. 40-41)

Burbidge also writes of:

> … the tactics that have been used by those who want to maintain the status quo. These include interminable refereeing, blackballing[275] of speakers at meetings, distortion and misquotation of the written word, rewriting of history, and, worst of all, the denial of telescope time to those who are investigating what some believe are the wrong things. (p. 42)

[275] An adverse vote especially against admitting someone into an organization.

The tactics used by those who attacked Arp are common in the scientific community. He cannot have his papers published (the referees will not allow them to be published), he is not given an audience, etc. D. M. McLean, who advocates that volcanoes caused the K-T boundary extinctions, complained, "The record seems to be one of indefensible favoritism toward the asteroid and virtual censorship of the volcano extinction theory." (p. 877) Sometimes the scientific community is little better than the Roman Catholic Church in its treatment of Galileo.

Liversidge wrote an extensive article discussing how several scientists have been blackballed for daring to differ with the current thinking in their field (pp. 43-48). He discusses Linus Pauling (the only man to win two unshared Nobel prizes), Louis Pasteur, Ignaz Philipp Semmelweis, Peter Duesberg, and Thomas Gold. Georg Simon Ohm suffered because he introduced the concept that became *Ohm's Law*. Boylestad – with regard to Ohm states:

> In 1827, developed one of the most important laws of electric circuits: *Ohm's law*. When first introduced, the supporting documentation was considered lacking and foolish, causing him to lose his teaching position and search for a living doing odd jobs and some tutoring. It took some 22 years for his work to be recognized as a major contribution to the field. He was then awarded a chair at the University of Munich and received the Copley Medal of the Royal Society in 1841. (p. 86)

All of these men have suffered ostracism at the hands of the "scientific establishment" for daring to differ with current theories. Pasteur, Semmelweis, and Ohm were proven to be correct after their claims were given a fair hearing. At the present time history relating to Pasteur (a theist) is being rewritten – he dared to introduce the *Law of Biogenesis*.

In recent times Louis Frank has experienced harsh criticism for his thesis of mini-comets (cf. pp. 339-340 for a more thorough discussion of these comets). Frank's thesis was first

published by Alex Dessler[276] in 1986 (cf. Frank, *et al.*, 1986 [parts 1 and 2] pp. 303-310). The treatment of Louis Frank is discussed in some detail by Frank and Huyghe and also in Marshall (pp. 622-623).[277] Even research in the area of mini-comets has been stymied. Even though John Olivero "came up with favorable data" supporting the thesis of Louis Frank he has not published an article on the subject because:

> "This is not a subject that's easy to get funding for." Olivero claims a friend at the National Science Foundation told him "not to even think of submitting a proposal" because "reviewers would cut you to shreds." (Marshall, p. 623)

It appears that Dessler felt the pressure of the scientific community so strongly that he "wrote a long attack on Frank's theory … In a phone interview, Dessler described this coup de grâce as 'my penance' for having started the debate in the first place." (Marshall, p. 623) This is a tacit warning to editors not to publish articles that are contrary to the prevailing scientific viewpoint. Frank and Huyghe responded with more documentation (*The Big Splash*). Frank and Sigwarth added more documentation in 1993.

Anderson and Spangler (p. 31) state:

> Though the published literature strongly supports the thesis of independence of nuclear decay events, a few exceptions have been noted. However, these have been disregarded, discounted, disbelieved and/or attributed to trivial, non-nuclear causes by virtually the entire scientific community. (The authors have been witness to the difficulties of publishing even well documented exceptions to the thesis of independence; referees tend to be quite critical.)

This is just another example of the silencing of those who might disagree with the conventional wisdom of the scientific community.

The treatment of Immanuel Velikovsky by the scientific community when he published his views was shameful.

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[276] Editor of *Geophysical Research Letters.*

[277] This issue of *Science* magazine has an extensive discussion of difficulties in publishing controversial articles in scientific magazines.

Warshofsky gives the details of this treatment (pp. 219-240). Other writers have listed the shameful details of the treatment of this man (cf. Pearlman, *et al.*). The disgraceful actions of the scientific community are a tacit warning to any scientist who might disagree with the *status quo* that he might also be treated in the same way Velikovsky was treated.

One of the most powerful influences that keeps the dishonest scientist honest in his research and publishing is the fear of exposure of his dishonesty. Shame is a powerful force to keep one from doing wrong. Honest scientists would not dream of falsifying data or results, but some dishonest ones do falsify the data. The pressure to conform to the currently accepted theories is quite strong and can cause some to become dishonest. This pressure and reluctance by referees to allow publication of articles which contradict the AAOEC worldview might be one reason why more information which refutes (contradicts) atheism has not been published.

Some AAOEC make the following argument:

First Premise: If the theistic position is not published in scientific journals, then the theistic position is contrary to science.

Second Premise: The theistic position is not published in scientific journals.

Conclusion: The theistic position is contrary to science.

The problem with this contention is that it assumes that AAOEC referees will allow a theistic position to be published (even if it is good science). This is the argument made by Cole and Scott (pp. 557, 558, and 574). Even AAOEC scientists have difficulty publishing their contrary positions (cf. Burbidge, Anderson and Spangler, Liversidge, Arp, etc.).

There is extensive pressure brought to bear upon anyone who might give a theistic interpretation of any research to give an AAOEC interpretation of the research. Ridicule is used to dissuade anyone from giving a theistic interpretation of any research. Theists are ridiculed in scientific journals as being superstitious and ignorant. Mitroff has an interesting study on the ambivalence of scientists (cf. Appendix E and Fox, 2024,

Appendix V).

Conclusion

All of the dating techniques that are used to date the age of the Earth as being millions or billions of years old are flawed. This author concludes that the Earth is only a few thousand years old and that there are no large gaps in the genealogies of the Scriptures. The Earth was created in a full-grown state (cf. Chapter 12, p. 244) and was rapidly shaped by the flood of Genesis 6-9. These events completely negate any uniformitarian assumptions of slow deposition of sediment, slow mountain building, slow continental drift, etc.

THE AGE OF THE UNIVERSE/SOLAR SYSTEM

CHAPTER FOURTEEN

Introduction

It is evident that, if the AAOEC geologic models (AAOECGM) are true, the age of the Earth cannot be greater than the age of the Sun. The age of the Sun is important to give an outside range of possible ages for the Earth and for life on the Earth. If the Sun is not billions of years old, as AAOEC claim, the Earth is not billions of years old. This chapter will consider several pieces of information that can be used to calculate the age of the Universe, the solar system, and the Earth. In addition, the claim that petrified forests prove the Earth is millions of years old will be considered.

The Age of the Universe

Stars are said to be several million light-years from the Earth, and this is used to *prove* that the Universe is extremely old (several billion years old). If the doctrine of a full-grown creation were true, it would explain how the stars could appear old. If the stars are *really* several million light-years from the Earth (by Euclidean geometry), God could have created the stars with the light in place between the star and the Earth. Some of the methods that have been used to measure the distance from Earth to a star are based upon assumptions which might not be true. One of these assumptions is that the light from the star has been traveling for several million years to reach the Earth, then that theory is inserted into the argument that the star is several million years old. This is a classic example of *circular reasoning*.

For those who believe that the Universe is young (less than 20,000 years old) there are seven possible explanations of the presence of light from the stars which are several billion light years away: (1) The stars are not that far away, (2) the speed of light has been changing (*slowing down*), (3) the light was created already in space between the star and the Earth, (4)

the Universe did not begin with a *Big Bang*, (5) the light travels in a different manner than it is thought to travel (Riemannian space[278] instead of Euclidean space), (6) time is advancing at a different rate due to the general theory of relativity (cf. Humphreys), or (7) there is some other unknown explanation (e.g. the nature of space is different in different parts of the Universe etc.).

With regard to the fifth option (above) E. W. Barnes discusses Riemannian (elliptical) space extensively (pp. 28-97) as do Moon and Spencer (pp. 635-641). Zage has an interesting discussion of hyperbolic (non-Euclidean) space (pp. 289-294). Moon and Spencer calculated the time for light to travel from a star that was 10,000 light years away (Euclidean space) to be 15.7 years if it traveled by Riemannian space (p. 640). If a star was an infinite distance away (Euclidean space), it would only take the light 15.71 years to travel from the star to an observer by Riemannian space (Moon and Spencer, p. 640). Humphreys cites papers that discuss several "severe problems with the Moon-Spencer theory." (cf. p. 46)

Albert Einstein assumed that space was curved or Riemannian (Wolfson and Pasachoff, p. 222) and that time was not constant in order to postulate his general theory of relativity. If he were correct, either space is Riemannian (elliptical) and/or time varies, and the points made in this section are correct. Jurgensen, et al. wrote:

> *Elliptical geometry* Through a point outside a line, there is *no* line parallel to the given line. (This geometry was discovered by Riemann and is used by ship and airplane navigators.) (p. 234) (Light travels – great circle route.)

If Einstein were incorrect about the constancy of the speed of light, then red-shift did not occur from the Doppler effect and Hubble's method[279] of dating the Universe is incorrect.

Black holes are "objects of such density that the escape speed

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[278] Unfortunately, an understanding of Riemannian space requires knowledge of partial differential equations.

[279] The calculation of the age of the Universe from Hubble's law was considered in Chapter 12.

exceeds that of light, making it impossible for anything to escape their gravitational grip." (Wolfson and Pasachoff, p. 222) Black holes are also called "gravitational singularities." If it is assumed that "black holes"[280] exist, then either space must be Riemannian or time changes at different rates in different parts of the Universe (from the general theory of relativity[281] [cf. the discussion by Humphreys]). As proof of this assertion this author offers two arguments. *First*, if light is emitted perpendicular to the surface of the black hole, it must decelerate to zero speed in order to be drawn back into the black hole by the massive gravity (if space is Euclidean). *Second*, this argument can only be escaped by arguing either that space is Riemannian, that the speed of light is not constant, or that general relativity explains this phenomenon. In either instance it is impossible to accurately date the age of the Universe by Hubble's Law or by any other method relating to the speed of light. There is some evidence that *The General Theory of Relativity* is true. Humphreys has a very reasonable explanation of this problem.

The velocity of an electromagnetic wave (including light) is variable (depending upon the medium through which it flows). The following equation gives the velocity v of electromagnetic waves – where ε = the electrostatic permittivity of the medium and μ = the magnetic permeability of the medium.

$$v = \frac{1}{\sqrt{\varepsilon\mu}}$$

If either (or both) ε and μ change, this will change the velocity v of the electromagnetic wave. The velocity c of an electromagnetic wave in free space is:

$$c = \frac{1}{\sqrt{\varepsilon_0\mu_0}}$$

Where ε_0 is the electrostatic permittivity of free space (a vacuum) $\varepsilon_0 = 8.854187817620 \times 10^{-12}$ F/m and μ_0 is the magnetic permeability of free space = $4\pi \times 10^{-7}$ N/A^2. This

[280] This author concedes that there is reasonable evidence for the existence of black holes.
[281] There is another theory of gravity (*Modified Newtonian Dynamics*).

yields a velocity of v = c = 299,792,458 m/s.

Students are taught in both electronic engineering technology, science (physics), and electrical engineering classes that the velocity of electromagnetic waves is constant. This is represented by the letter *c*. This is true in space – near the Earth and in a vacuum on the Earth – but it is not true in all parts of space. There exist gravitational lenses where the fabric of space is changed and the velocity of light is changed (cf. Renn, et al.). Lenses operate upon the principle of refraction – the velocity of light is different through different mediums. With gravitational lenses, light travels at different velocities through different parts of space. It appears that space can be stretched – this changes the values of ε and μ.

The Scriptures speak of the heavens (space – cf. p. 60) being stretched: נטה (pronounced *natah* – Strong's # H5186) "stretch out, spread out, extend, incline, bend" (BDBG, p. 639). Cf. Job 9:8, 26:7, Ps. 104:2, Isa. 40:22, 42:5, 44:24, 45:12, 51:13, Jer. 10:12, 51:15, and Zech. 12:1 where the heavens were stretched. If space (the heavens) is stretched, the velocity of light might be considerably different in some parts of space. This would make dating the universe by the velocity of light to be impossible.

While the age of the Universe does not directly relate to the dating of the Genesis flood, it is important to the age of the Earth. The age of the Universe is known to be less than the age of some stars. This is, of course, impossible and creates a problem for the AAOEC. Jacoby (p. 741) says:

> TECHNOLOGY has caught up with Edwin Hubble's question of the 1920's: what are the scale and age of the Universe? Preliminary answers given last month by Pierce *et al.* and strongly backed up on p. 757 of this issue by Freedman *et al.* indicate that the Universe is younger than its oldest stars, an apparent impossibility that will force a re-examination of our Universe model and how stellar ages are measured.

This demonstrates that there is some inherent error in their methodology for determining the age of the Universe. The

interpretation of this information that the Hubble telescope has discovered has been questioned by several astrophysicists (cf. Cowen, 1995, p. 198). Other problems with the dating of the age of the Universe are pointed out in the July 1994 issue of *Sky & Telescope* (Anonymous #19, p. 14).

Is Matter Eternal?

The question of the nature of reality (ontology) must be understood in order to determine whether or not God exists. The question of the nature of reality can be summarized in the following disjunctive syllogism:

Either only matter is eternal
Or only mind is eternal
Or both mind and matter are eternal.

The atheist and agnostic have opted to claim that only matter is eternal. The atheist and agnostic generally claim that mind is merely matter in motion (electrical signals in the body). The Scriptures plainly state that God is eternal (Gen. 1:1; Ex. 3:14; etc.). The atheist and agnostic claim the young-earth Christian is unscientific and unreasonable to accept miracles (the creation etc.) because of the principle of uniformity (*the laws of nature apply at all times and in all places*). The AAOEC do not have the laws of nature to apply at all times and at all places because of at least two different laws of science. *First*, the first law of thermodynamics essentially states that matter cannot either be created or destroyed. *Second*, the second law of thermodynamics states: "**It is impossible to construct a heat engine operating in a cycle that extracts heat from a reservoir and delivers an equal amount of work**." (Wolfson and Pasachoff, p. 528) This is saying that no physical thing is 100% efficient (in effect – every physical thing is wearing out). The principle of entropy is illustrated in this quote:

> We started this chapter by arguing that natural processes are generally irreversible, going from ordered states to disordered states. It's this loss of order-as when a hot and a cold object eventually reach the same temperature – that makes energy unavailable to do work. Entropy is a measure of this disorder. Given the tendency of systems to evolve

> toward disordered states, we can make a statement about entropy that is, in fact, a general statement of the second law of thermodynamics: **Second law of thermodynamics: The entropy of a closed system can never decrease** … **Second law of thermodynamics: the entropy of the universe can never decrease.** (Wolfson and Pasachoff, pp. 544-545) (Emphasis in the original.)

From these two laws of thermodynamics and the principle of entropy (all systems are less than 100% efficient) matter cannot exist forever (these apply only to the physical realm). From this it is plain that matter cannot be eternal; therefore, only Mind (God – a spirit Being [Jn. 4:24]) is eternal. This argument forces the AAOEC to either deny these laws of science or deny that mind (a spirit) is separate from matter or deny both.

The proof that matter cannot be eternal has driven some atheists and agnostics to the absurd assertion that matter has created itself (cf. Linde, pp. 48-55). This is the absurd assertion that something has come from nothing. It is incredible that rational persons could make such an assertion!

Is the Sun Shrinking?

There is historical data that proves the Sun has been shrinking for at least the last 400 years. The *first* reason to believe the Sun has been shrinking is based upon data derived from the Royal Greenwich Observatory.

> At high noon on every clear day since 1750, astronomers at the Royal Greenwich Observatory have been measuring the diameter of the Sun. (Anonymous #20, *Physics Today*, p. 17)

The *second* reason to believe the Sun has been shrinking is based upon data that is derived from the extent and length of solar eclipses. "Old eclipse observations can also shed light on solar shrinkage, because a larger Sun in the past would shorten the time of eclipse." (Anonymous #20, *Physics Today*, p. 18)

The Sun is presently shrinking quite rapidly, rapid by the standards of time the solar system is supposed to have existed (> 4.5 billion years).

> By analyzing data from Greenwich in the period 1836-1953, John A. Eddy … and Aram A. Boornazian … have found evidence that the Sun has been contracting about 0.1%/century during that time, corresponding to a shrinkage of about 5 feet/hour. (Anonymous #20, *Physics Today*, p. 17)

Eddy and Boornazian checked every possible source of error they could find that astronomers said might have caused errors in the readings and discounted the possibility of this shrinkage being "mere reading errors." In addition, this data was checked with data from the Naval Observatory in Washington D.C. where the same type measurements have been made since 1846.

Eddy and Boornazian claimed the Sun is shrinking by "2 second of arc per century." (Anonymous #20, *Physics Today*, p. 18) Sofia, O'Keefe, Lesh, and Endal (pp. 1306-1307) concluded from their calculations that the shrinkage was only 0.5 arc seconds[282] per century. While this figure is different, it is only 25% as large as the figure of Eddy and Boornazian and really does not change the order of magnitude of the dating of the Sun and Earth. The data used by Sofia, *et al.* was for the years 1850 to 1937. Dunham, *et al.* stated: "between 1715 and 1979, a decrease in the solar radius of 0.34 ± 0.2 arc second was observed." (p. 1244)

The Significance of Solar Shrinkage

Gilliland discusses several studies which all conclude the Sun is shrinking. Gilliland states:

> While the large (1" per century) secular decrease in radius tentatively suggested by Eddy and Boornazian (1979) is not

[282] Arc second: A circle is divided into 360 equal segments called degrees. Each degree is divided into 60 equal segments called arc minutes. Each arc minute is divided into 60 equal segments called arc seconds. An arc second is 1/1,296,000 part of a circle.

> supported by other investigations … the preponderance of evidence still supports a *negative* secular trend over the last few centuries. It should be emphasized that stellar evolution theory predicts a *positive*, albeit indetectable small, secular trend for the solar radius. Any certain detection of a negative secular trend of the solar radius on a time scale of centuries would be of fundamental astrophysical significance. A negative secular trend lasting for solar thermal times scales would present a more serious problem for astrophysicists than the oft mentioned solar neutrino problem. (pp. 1144-1145)

Gilliland also states:

> Since stellar evolution theory predicts a positive secular solar radius change with increasing age ($+3.3 \times 10^{-6}$ arc s per century), any negative secular change (or detectable large positive change) is quite significant. (pp. 1149-1150)

That a significant change has occurred is admitted by Gilliland:

> Given the many problems with the data sets, one is not inexorably led to the conclusion that a negative secular solar radius trend has existed since A.D. 1700, but the preponderance of current evidence indicates that such is likely to be the case. (p. 1150)

In addition, this means that neither Mercury nor Venus could have existed in their respective orbits around the Sun for anywhere near 11 million years. The AAOEC cannot allow this rate of shrinkage to be extrapolated backwards in time as he does so many other things without giving up his claim that the Earth is over 4 billion years old. If this process were extrapolated backwards, it would violate the worldview of the AAOEC astronomer. At this point the AAOEC astronomer rejects the empirical evidence (science) and clings to his AAOEC worldview (materialism) instead.

How is the Sun Shrinking?

It is possible that the Sun may be giving off energy as a result of contraction resulting from gravity. This would occur because of the loss of gravitational potential energy as the

surface of the Sun contracted toward the center of the Sun. This would be derived from the formula GPE = mgh (m = mass, g = gravitational constant [of the Sun], and h = the change in height of the mass). (*GPE = gravitational potential energy*) A loss of potential energy would require that the energy be radiated from the Sun in the form of either light or some other energy (kinetic energy etc.). This theory was rejected partly because it would demand that the Sun be much younger than the claims of several billion years. If the Sun was merely giving energy by gravitational contraction, it should spin faster as it shrinks. This is the same principle (the conservation of angular momentum [cf. pp. 106-107]) by which an ice skater spins faster as he pulls his arms toward his body while spinning and increases the speed of his rotation. This is not a problem if the Sun is only a few thousand years old. For this reason, this theory has been rejected by AAOEC and the theory that the Sun gives off energy by nuclear fusion has been accepted.

The reader should be aware that the theory that the Sun gives off energy by nuclear fusion has at least one major problem. The process of nuclear fusion gives off particles called *neutrinos* and the quantity of neutrinos coming from the Sun is much lower than that required for nuclear fusion to be the sole source of the energy. Gribbin states: "the Sun is producing fewer neutrinos than standard theories predict." (1994, p. 14) Some of these problems with neutrinos are discussed by Bahcall *et al.* (pp. 29-34), Peterson (p. 6), Raghavan (pp. 45-51), and Taubes (pp. 1157-1158). Either the method of measuring the neutrinos is inaccurate, something is stopping the neutrinos, the theories of production of neutrinos are wrong, or some other process besides fusion is causing the Sun to emit energy. Perhaps part of the energy from the Sun comes from gravitational contraction and part of it comes from nuclear fusion. Gravitational contraction could generate enough heat to sustain nuclear fusion. Several planets radiate more energy than they receive from the Sun and other sources.

> The existence of an internal energy source within Jupiter was discovered in 1969, when the first infrared flux measurements indicated that the planet radiated twice as

> much energy as it received from the Sun … Later measurements from Earth and from space, confirm this result and established the presence of internal energy sources inside Saturn and Neptune, but not within Uranus. (Encrenaz, T.; *et al.*, p. 204)

The fact that these planets are net energy sources is explained:

> The most plausible explanation given for the excess of internal energy in Jupiter is that it derives from gravitation: the cause is either the gravitational collapse that occurred when the planet was formed, or internal differentiation of light and heavy elements. (Encrenaz, T.; *et al.*, p. 206)

If the Sun produces energy exclusively by nuclear fusion, there are at least three possible ways the Sun can be shrinking. The *first* way it is shrinking is that it is converting its mass into energy by the process of nuclear fusion (or by some other unknown process or a combination of both known and unknown processes). The conversion of mass into energy is based upon the equation $E = mc^2$. When the hydrogen isotope ${}_1H^2$ (${}_1D^2$) atom fuses with a ${}_1H^1$ atom, it yields ${}_2He^3$ by the formula. ${}_1H^2 + {}_1H^1 = {}_2He^3 + \gamma$ (energy). This converts part of the mass of the two hydrogen atoms into energy. This is the same principle by which the hydrogen bomb operates (nuclear fusion). According to D. Hartmann (p. 19) the Sun has a luminosity of 3.9×10^{26} Joules/second. From the formula $m = E/c^2$ this amounts to a mass of $m = (3.9 \times 10^{26}\ J/sec)/(3 \times 10^8\ m/sec)^2 = 4.33 \times 10^9$ kilograms/second being converted to electromagnetic waves (mostly infrared, visible, and ultraviolet). This amounts to 1.367×10^{17} kilograms/year being converted to light or 5.46×10^{26} kilograms in 4 billion years.

The *second* way the Sun could be shrinking is that it ejects large numbers of particles from its surface because of both the intense heat and explosions on the surface of the Sun (sunspots). Some scientists claim the solar wind has not changed its value since the beginning of time.

> There is no evidence in the lunar samples of any changes in the intensity and frequency of solar flares, the solar

> wind, or the galactic cosmic radiation as far back as we can look into the history of the Moon. The solar wind has not changed for 4.5 billion years. Thus the lunar studies may indicate that the Earth's ice ages were not triggered by changes on the Sun as had been speculated. (Burgess, p. 119)

Other scientists claim the solar wind has changed its value and that the present value is considerably less than it was several billion years ago.

> By analogy[283] with what we observe currently in young stars, we may assume that the Sun, in the first stages of its existence, must have experienced intense magnetic activity. Equally, by comparison with the stellar winds observed in the *T-Tauri phases,* it is possible to estimate the intensity of the primordial solar wind as being about 10^8 times its current value. (Encrenaz, Bibring, Blanc, p. 54)

Encrenaz *et al.* give the intensity of the solar wind:

> The solar wind is by far the most intense flux of particles: at present this flux is more than 10^8 protons $cm^{-2}s^{-1}$, and its velocity varies from 350 to 650 km/s, which corresponds to the energy of about a keV/nucleon[284], … Solar cosmic rays, a million times less intense, have an energy that is a thousand times greater (1 MeV/nucleon[285]). They penetrate a few tens of microns[286] into the regolith.[287] (Encrenaz, Bibring, Blanc, p. 150)

These values are on the surface of the Moon which has a mean distance of 149.6 million kilometers from the Sun. For the purposes of calculation this author will first assume the most conservative value for the solar wind (that it has not changed since the beginning of the solar system). Assuming the Sun is an isotropic radiator[288] with a radius of 149.6 million

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[283] Cf. the usages of analogies in Fox, 2024, Chapter 12.

[284] kiloelectron-volts/nuclean (a measure of energy for each subatomic particle). A nucleon is a constituent of the nucleus of an atom.

[285] Megaelectron-volts/nuclean (a measure of energy for each subatomic particle – either a proton or a neutron).

[286] Micrometer – MRF

[287] Regolith = mantle rock; loose sediment and fragments covering the solid rock.

[288] A point source.

kilometers, it has a surface area of $A = 4\pi r^2 = 2.79 \times 10^{25}\,cm^2$. With each square centimeter receiving 10^8 protons per second this makes a total of at least 2.79×10^{33} protons per second leaving the Sun. Protons have a rest mass of 1.673×10^{-27} kilograms per proton. This means that the Sun gives off 4,667,436 kilograms of mass each second from the solar wind alone. The solar wind removes 1.472×10^{14} kilograms per year from the Sun. The present mass of the Sun is 1.99×10^{30} kilograms. If the assumptions of Encrenaz *et al* (cf. p. 54, above) are correct the Sun would have lost 1.472×10^{22} kilograms/year from the primordial solar wind.

In addition, the solar wind particles have a kinetic energy of $KE = \frac{1}{2}(mv^2)$. If the average value of the velocity of the solar wind particles is 500 km/sec (500,000 m/sec) (cf. Encrenaz, Bibring, and Blanc, p. 150), the kinetic energy $KE = \frac{1}{2}(1.673 \times 10^{-27})(500{,}000)^2 = 2.09 \times 10^{-16}$ Joules/proton. Solving the equation $E = mc^2$ for mass (m) obtains $m = E/c^2$. This gives a mass of $m = E/c^2 = 2.32 \times 10^{-33}$ kilograms/proton of mass that was converted to energy to accelerate the proton from the Sun's heat. With a total of 2.79×10^{33} protons per second leaving the Sun, this means it requires 6.48 kilograms of mass to accelerate all the protons leaving the Sun each second (2.05×10^8 kilograms/year).

The *third* possible way the Sun could be shrinking is that the density of the Sun might be increasing. This is thought to occur in some stars. However, it is not supposed to occur in stars in the class and stage that the Sun is in at its present stage of development. In fact, Gilliland states:

> A negative secular trend lasting for solar thermal times scales would present a more serious problem for astrophysicists than the oft mentioned solar neutrino problem. (p. 1145)

Extensive shrinkage of the nature found by Eddy and Boornazian (p. 17) can only be explained by the Sun producing energy by a means other than nuclear fusion. This author theorizes that the Sun is shrinking by these three ways in addition to gravitational contraction. The energy emitted by the Sun probably results from a combination of gravitational

contraction and nuclear fusion. The most reasonable explanation of these facts is that gravitational contraction causes enough heat to sustain some nuclear fusion. If the early Sun only produced energy by gravitational contraction and nuclear fusion began after the creation, the decay of radioactive isotopes in the Earth would increase (after the fusion began) because of the production of solar neutrinos.

How Old is the Sun from This Information?

If the Sun is shrinking at a rate of 5 feet/hour (152.4 centimeters/hour), the Earth would be inside the Sun if this rate is extrapolated back in time 11.2 million years (assuming this is a shrinkage in the radius of the Sun). If this rate is a shrinkage of the diameter, it would require 22.4 million years. (*Because of Roche's limit* [cf. p. 161] *these figures are conservative*.) It is evident that life on the Earth could not have existed anywhere near that time because of the intense heat the Sun would have caused on the surface of the Earth. Obviously, this contradicts the claim that the solar system is several billion years old. This may be one reason many astronomers are reluctant to accept this information.

> Although the Eddy-Boornazian analysis is certainly intriguing, many astronomers are cautious in accepting-without further evidence-the conclusion that the Sun is shrinking by such a large amount. (Anonymous #20, *Physics Today*, p. 18)

How does the AAOEC respond to this information and these simple calculations?

> Eddy and Boornazian believe the Sun has been shrinking for a hundred years, and perhaps 400 years or more. They believe that because the rate is so fast-at this rate the Sun would shrink to zero radius in 200,000 years – the shrinkage is temporary and does not apply to the entire solar mass. Noyes told us that the shrinkage must be transitory because we would have already seen geological evidence of any long-term contraction. (Anonymous #20, *Physics Today*, p. 18)

The argument of Noyes is based upon his assumption that the

Earth is billions of years old. A number of scientists have claimed there must be some unknown explanation for this phenomenon.

Additional Evidence of a Young Solar System

Recently, a number of Near-Earth Asteroids (NEAs) have been discovered. It has been discovered that:

> … large numbers of these NEAs are following orbits of very low (cf. Footnote 166, p. 180) eccentricity, about 0.1 compared to 0.5 for a typical Apollo asteroid (and 0 for a perfect circle). Further, they have orbital periods very close to one year. In short, these bodies are closely following Earth's orbit around the Sun. Tom Gehrels has informally named these bodies in Earthlike orbits the Arjuna family … Because of these orbital properties, some of these bodies have very short expected orbital lifetimes before colliding with Earth. Many Apollos have expected lifetimes of tens of millions of years to over 100 million years. But some Arjunas are so vulnerable to Earth's gravity that their expected lifetimes are a thousand times shorter. Arjunas must make up a surprisingly large fraction of the bodies striking Earth. Since they are both numerous and short-lived, there must be a powerful mechanism for replenishing them as quickly as they are destroyed. (Lewis, p. 81)

The short lives of these asteroids and absence of a mechanism to replenish them creates a problem for the AAOEC. It is likely that these NEAs are remnants of the rings of the planet that caused the flood (Mercury). Unless there is a mechanism that replenishes these asteroids, their short lives are evidence tending to support a young solar system.

In addition, there is evidence of the existence of small bodies of ice that may be orbiting the Sun in a similar orbit to the near-Earth asteroids. These small bodies of ice were called tiny comets or mini comets. Louis Frank proposed the existence of these bodies in 1986 (Frank, *et al.*, pp. 303-310, also cf. Kerr, 1988, pp. 1403-1404). The evidence that these bodies of ice exist has increased (cf. Monastersky, 1997, p. 332 and Kerr, 1997, pp. 1333-1334). If these bodies of ice exist,

they are probably remnants of the rings and parts of the crust of the planet ejected upon impact that caused the flood. If they are remnants of the rings, the ice that impacted the Earth during the flood was more of the nature of a loose snowball than of solid ice. Frank *et al.* hypothesize that "the density of the water snow is 0.1 gm/cm^3." (1986, pt. 2, p. 308) In all likelihood their orbits are either close to the orbits of the near-Earth asteroids or they are in orbit around the Earth (or some orbit the Sun and some orbit the Earth – geocentric orbits).

Several scientists have objected to the existence of the small comets. Dessler gives a summary of the arguments that have been lodged against the small comet hypothesis (pp. 355-382 and 609). Most of the objections to the existence of these bodies of ice are answered if these are unique to the Earth because of their relationship to the flood and if the solar system is only a few thousand years old. Some of the remnants of the rings of Mercury probably continued to orbit (and may still) orbit the Earth. These small comets could be in orbit around the Earth rather than traveling into deep space. Their orbiting the Earth would explain why they are not impacting the Moon – especially if they are in the ecliptic plane. Dessler states:

> I regard the nondetection of small-comet lunar impacts to be one of the most persuasive facts leading to the conclusion that small comets, as described by FSC,[289] do not exist. (p. 367)

Dessler's reasoning is irrational. Here is his argument:

> First Premise: If we have detected small-comet lunar impacts, then small comets can exist.
>
> Second Premise: We have not detected small-comet lunar impacts. (He *denies the antecedent* here.)
>
> Conclusion: Small comets cannot exist.

Of course, this argument is unsound because it commits the logical fallacy of *denying the antecedent*.

Radiocarbon and the Age of the Atmosphere

One of the assumptions of radiocarbon dating is that it is

[289] Frank, Sigwarth, and Craven.

produced at a constant rate (cf. p. 71). Radiocarbon decays in an exponential manner from the following formula: $N = N_0e^{-kt}$ (cf. p. 260 for a discussion of this formula). Because the decay rate is a function of the amount of radiocarbon and the production rate of radiocarbon is constant, radiocarbon should reach a state of equilibrium.[290] It is generally accepted that this state of equilibrium should occur in less than 100,000 years. "Radiocarbon dating applies mainly to objects formed more recently than fifty thousand years ago." (Brush, p. 52) Since the Earth's radiocarbon is not at equilibrium, the Earth must be less than 100,000 years old. Fairhall and Young recognize this problem:

> We note in passing that the total natural ^{14}C inventory of 2.16×10^{30} atoms which is based on this value corresponds to a ^{14}C decay rate of 1.63 disintegrations/sec./cm.^{2} of the earth, considerably below the estimated production rate of ^{14}C atoms averaged over the last 10 solar cycles (111 years) of 2.50 ± 0.50 atoms/sec./cm.^{2}. From a geophysical point of view it would be very surprising if the decay rate and the production rate of ^{14}C were out of balance as seriously as the difference between the above two numbers would suggest. It is difficult to reconcile this discrepancy by errors in computing the ^{14}C inventory since the bulk of the ^{14}C is in the sea, where the ^{14}C concentration relative to the terrestrial biosphere is known fairly well. Since the ^{14}C inventory is directly proportional to the value assumed for the concentration of ^{14}C in the terrestrial biosphere, a specific activity of 20.6 d.p.m./gram carbon would bring the decay rate into balance with the present-day production rate. However, it is doubtful that the several direct measurements of the specific activity could have understated this quantity by the ~ 35% required to achieve concordance. The source of the discrepancy is therefore unknown unless the present-day production rate is indeed significantly higher than the average production rate over the last 8000 years, the mean life of ^{14}C. (p. 402)[291]

Aardsma, a creationist, discusses this problem with regard to

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[290] Equilibrium occurs when the radiocarbon decay rate equals the production rate.

[291] The references cited by Fairhall and Young are omitted.

the dating of the time of the flood. Aardsma states:

> We have seen that the extent of the dendrochronologies coupled with the estimated duration of the ice-age seems to suggest a date for the Flood of between 10,000 B.C. and 13,000 B.C. We have further seen that the build up of radiocarbon in the active carbon reservoirs of the world following the Flood seems to imply a most probable date for the Flood of 12,000 B.C. Both of these methods involve assumptions, of course, but they do not both involve the *same* assumptions. (p. 49)

This author has demonstrated that some of the assumptions made by Aardsma are probably incorrect (cf. pp. 116-117, 266, 274-275, and 279). If the Tunguska impact caused significant deviations in the amount of radiocarbon produced (cf. pp. 281-282), the impacts of the ice rings of the planet that caused the flood surely caused even greater deviations in the amount of radiocarbon produced.

Lunar Recession and the Age of the Earth-Moon System

The Moon is receding from the Earth due to tidal friction (cf. pp. 206 through 210). Kaula and Harris state:

> Considerable work has been done since 1970 on determining the acceleration n_M of the moon's orbit. … A dissipation of 1/Q consistent with an n_M of about -40 arc sec/century brings the moon back to the earth within 0.9×10^9 yr.[292] (p. 363)

Kahn and Pompea admit that the AAOEC has a problem with lunar recession:

> … it is still a generally accepted characteristic of lunar orbital evolution that it proceeded most rapidly when the Earth and moon were closer together. Tidal forces were then greater because the tidal torque is proportional to $a^{-11/2}$. This means that the orbit would have quadrupled in size in the first 10 Myr if the Moon originally had been near the Roche limit. However, when the present astronomically determined rate of the Moon's recession is extrapolated back in time, the moon approaches the Roche limit less

[292] 900 million years – MRF

> than 10^9 yr ago, according to Kaula, and the lunar surface melt would have occurred due to tidal energy dissipation. There is no lunar or terrestial (sic) geologic evidence to support such a close approach at that time, since the youngest rocks on the Moon were crystalised 3.25×10^9 yr ago. This represents a time scale problem which has not been satisfactorily explained. (p. 610)

The most obvious explanation of this "time scale problem" is to admit that both the Earth and the Moon are quite young.

AAOEC and Extrapolation

The AAOEC wantonly extrapolates (usually by linear extrapolation) present processes backward in time, assuming that "the present is the key to the past." This quote is found in so many books that this author need not give a citation. But they are totally inconsistent in that they will not extrapolate backwards with any information that disproves their AAOEC assumptions of the Earth being over 4 billion years old. A number of AAOEC have used linear extrapolation for variables that do not vary in a linear manner. When this is done the whole procedure is invalid. Inherent in linear extrapolation is the assumption of uniformitarian processes. AAOEC who deny *substantive uniformitarianism* (cf. pp. 19-20) are inconsistent when they make claims that are based upon substantive uniformitarianism – they are guilty of the logical fallacy of *special pleading*. This may be one of the reasons that some geologists are trying to hang on to substantive uniformitarianism.

The AAOEC will not extrapolate the decay of the Earth's magnetic field backwards because it would contradict their assumption of a 4.5 billion-year-age for the Earth. They came up with the claim that the magnetic field of the Earth has reversed direction to respond to this problem. Yet they have no mechanism whereby this could have occurred. They ask the theist to give a mechanism for every phenomenon but cannot even give a plausible theory for the reversal of the magnetic field of the Earth. There is no known mechanism that would reverse the magnetic field of the Earth (cf. Shipman, Wilson,

and Todd, p. 681).

The AAOEC will not extrapolate the shrinkage of the Sun backwards because: "… the shrinkage must be transitory because we would have already seen geological evidence of any long-term contraction." (Anonymous #20, *Physics Today*, p. 18) The AAOEC has no mechanism whereby this shrinkage would occur, but not continue for several million years, but he asserts that there must be such a mechanism because he knows (*a priori*) the Earth is over 4 billion years old.

The AAOEC will not extrapolate (backwards in time) the bombardment of the solar wind upon Moon rocks. They argue that the rocks are turned over by meteorite impacts because the effects of the solar wind can be measured in the rocks. The high energy particles of the solar wind leave trails in the rocks as they enter the rock and can be seen with electron microscopes. Burgess says:

> Since the radiation appears to have been quite constant, it can, in turn, be used in a kind of depth of "suntan" technique to find out how long rocks have been exposed to the solar wind and to cosmic radiation. This technique reveals how long a rock has been on the surface, which is usually less than a few million years, and how long it has been within a few inches (10 cm) of the surface, which is usually between one and ten million years. The solar flares are used for the first measurement, and the deeper penetrating cosmic rays are used for the second. Track densities show that buried samples were once exposed on the surface but have been turned over by the lunar "gardening" process. From solar flare tracks scientists estimate how long a sample was exposed on the surface, from cosmic ray tracks how long it was within a few centimeters of the surface, and from meteor impacts how long it remained in a deep surface layer. (p. 119)

It is evident that the amount of penetration by the solar wind is at least a thousand times less than one would expect for rocks that had experienced 4.5 billion years of exposure to the solar wind. The astronomer theorizes a "'gardening' process" whereby the rocks are turned over by the forces of meteorites.

He cannot extrapolate the effects of the solar wind backwards for over 4 billion years without having extensive problems with his system.

The AAOEC will not extrapolate the erosion of the continents backward in time because the erosion should have leveled the continents and deposited them into the oceans (cf. pp. 49-50). Kennedy discusses several problems with geology. With regard to the erosion of the continents he states:

> The fourth problem, that of the long lifetime of continents and mountain ranges, is perhaps the most difficult of all. The rivers of the world strip tremendous quantities of rock debris off the continents each year and deposit it in the oceans … The great rivers are steadily wearing down their basins … At this rate, all the land masses of the world would be eroded to sea level in something of the order of 10-25 million years. (pp. 497-498)

Dott and Prothero state:

> North America is now being eroded at a rate that could level it in a mere 10 million years … It is clear that, in the past, the rate of erosion and/or the volume of land above sea level has, on average, been much less than now. (p. 142)

The Mississippi River delta is not large enough to be several hundred million years old. Kennedy states:

> The Mississippi, for example, contains about one-half percent of solids as it flows into the Gulf of Mexico. Each year, it brings to the Gulf of Mexico approximately 750 million tons of dissolved and solid material. (p. 497)

The AAOEC will answer that "some unknown factor changed the deposition rate." Another way he will answer is to claim that something raised the ocean beds and changed them into dry land. They seem to forget the principle of isostasy (cf. pp. 175-178). The deposition of sediment in the oceans should lower the ocean floors rather than raise them. With regard to extrapolation in geology J. Wilson (1959) states:

> When one considers that in a country so well mapped as Switzerland, the competent Swiss geologists have often been unable to predict in advance the precise arrangement of the strata to be found in railway tunnels a few thousand feet below the surface, one is forced to conclude that

> geological observations, while valid enough, are not of a type that lend themselves to extensive extrapolation. (p. 1)

The erosion of the continents "to sea level in something of the order of 10-25 million years" (Kennedy, p. 498) should totally destroy any continental drift (plate tectonics) evidence from fossils (cf. p. 49-ff.). One evidence for plate tectonics is the supposed fitting of the continents of Africa and South America. The drift of the continents was supposed to occur in the order of several hundred million years, but the continents would have been eroded in less than 25 million years. There should not be any evidence (geologic or otherwise) to link the continents of Africa and South America together! If the AAOEC provides evidence of plate movement from the fossils, the drift occurred rapidly as this author asserted (cf. p. 111).

The AAOEC will not extrapolate lunar recession backwards in time because it conflicts with their other dating systems (cf. p. 342-343). Kahn and Pompea state:

> Historical records[293] of ancient solar eclipses provide a means of studying the evolution of the Earth-Moon system for the past 3,000 yr. …
>
> From the ancient eclipse study, the rate of change in the lunar orbit semi-major axis is … 1.5×10^{-10} parts yr^{-1}, or a recession of the Moon of 5.8 cm yr^{-1}. The value for the Earth-Moon distance 69.5 Myr ago is 0.840 times the present distance. This implies an average change in the lunar orbit semi-major axis of 26.6×10^{-10} parts yr^{-1} or an average recession of 94.5 cm yr^{-1}. This is 17 times the rate from the ancient eclipse studies and implies (if this rate is the correct long-term one) that the recent dissipation is not typical for past geologic time and that additional energy sinks may be involved. (p. 608)

AAOEC admit that they do not have any rocks that are near as old as they claim the Earth to be.

> … there are no rocks on Earth that give isotopic dates of

[293] References cited by Kahn and Pompea are not cited.

> older than about 3600 million years. We therefore have no record of the processes operating on earth for periods before this time. (Guest and Greeley, p. 5)

In another instance rocks from the Earth are dated a little closer to the 4.5-billion-year age, but still over 500 million years off.

> Researchers have identified the Earth's oldest known rocks amid the remote lakes and tundra of northwest Canada. Dating back 3.96 billion years, the rocks should help scientists construct a picture of the planet's nebulous early history, which began about 4.5 billion years ago … Bowring and his co-workers dated the rocks by examining the relative amounts of uranium and lead locked within tiny zircon crystals embedded in the rock … By measuring the ratio of uranium to lead within the crystal, geologists can use the steady radioactive decay as a clock to date the crystal … Though they come from the oldest known rocks, the Canadian crystals themselves are not the oldest remnants of the Earth ever found. Researchers have dated Australian zircon crystals at almost 4.3 billion years old. However, these crystals were located in much younger rock, indicating they eroded from their original rock billions of years ago and were then incorporated into newer rock. (Monastersky, 1989, p. 228)

This is an admission that they do not even have rocks dated by the radiometric evidence for the supposed 4.5-billion-year age of the Earth. The AAOEC has extrapolated backwards the processes and "assumed" the age of the Earth. He does not even have the 4.5-billion-year-old rocks. The AAOEC assumes that the 4.5-billion-year-old rocks were melted by molten magma from below or eroded by physical processes. The quote of Monastersky demonstrates the method by which these rocks are dated (uranium/lead ratio). The decay rate of the uranium has been extrapolated backwards by the scientist, and it is assumed that the decay rate is unchanged and is unaffected by outside influences. This process of dating the rocks contains all the problems that were discussed in Chapter 14. If the current geologic theory of plate tectonics is true, these zircon crystals should have been recycled (cf. p.

308).

Misrepresented Calculations

Many of the methods used to calculate the age of the Universe, Sun, Earth, Moon, etc. give upper limits of the age, not absolute proofs of the age of the Universe, Sun, Earth, Moon, etc. This author has no problem with the AAOEC in his calculations if he would state his assumptions and the age he has calculated from these assumptions.

The *first* example is that calculations of the age of an artifact by radiocarbon dating assumes the radiocarbon in the biosphere (atmosphere, land, and sea) has been constant for billions of years. This claim has been disproven by a number of facts, some of which were presented in this book.

The *second* example is that the dating of the atmosphere assumes that the original atmosphere of the Earth was lost by some means and then was replenished by an outgassing from the interior of the Earth. Broadhurst claims this did not occur:

> Planetary scientists have long known that volcanic activity is an important way for gases produced inside a planet to reach the surface. Given enough time this process, called volcanic degassing, could create an atmosphere on a terrestrial planet. But recent laboratory research has cast doubt on whether volcanic activity by itself could create the present atmospheres belonging to the terrestrial planets. (p. 40)

In addition, the AAOEC assumes that all the argon in the atmosphere was generated by radioactive decay. He assumes that the decay of radioactive isotopes is constant (not affected by external influences). If the AAOEC would freely admit his assumptions, it would be evident that he is guilty of *circular reasoning*.

The *third* example is that the age of the Sun is calculated from the amount of helium and hydrogen in the Sun. It is assumed that no helium existed in the Sun at its beginning. What these calculations obtain is the maximum age of the Sun if these

calculations are correct and if all these assumptions are true. Gribbin states:

> So the big bang model tells us that there was a period of about 200 seconds during which neutrons, which were originally as abundant as protons, were decaying without being replaced. If neutrons had a very short lifetime, all the neutrons from the big bang would have decayed in the 200-second gap, and there would be no deuterium, no helium and no heavy elements in the Universe today. If neutrons had a very long lifetime, most of them would have survived, and virtually all the primordial nuclear material would have been processed into helium …
>
> The spectra of the light from old stars show that they formed out of clouds of material composed of 75 per cent hydrogen and 25 per cent helium. (1993, p. 44)

Do Petrified Forests Prove the Earth is Old?

In Yellowstone National Park there are several layers of rock that have petrified trees in the rock formations.

> Specimen Ridge cliffs which outcrop 2,000 feet (*610 meters – MRF*) above the plateau extend for 20 miles (*32 kilometers – MRF*) along the Lamar River and include strata which contain some of the most remarkable petrified trees in the park. Many superposed layers of upright petrified trunks (not less than 15 according to Knowllton [1899]) appear to indicate that in past geologic time a succession of forests flourished only to be repeatedly covered with volcanic ash and lava. (Beyer, p. 553)

The layers in which these trees are found contain the trees in several positions. Some are upright, some are horizontal, and some are diagonal (tilted at an angle). The AAOEC interpretation is that these trees are a number of different forests that were covered by volcanic debris. These trees are dated, by tree rings, to be several hundred years old. If there are 15 layers of rocks with petrified trees in each layer, the assumption is that there must have been 15 volcanic eruptions. These forests, assumed to be several hundred years

old each, are then multiplied by 15 to get about 5,000 years. The AAOEC then claims that this proves the Earth is older than 6,000 years. If this were deposited during the flood, it dates the flood to be at least 5,000-6,000 years after the first forest was destroyed. If this were deposited after the flood, it dates the flood at 5,000-6,000 before the last forest was destroyed. Dorf claims there were 27 different forests that were covered (p. 108). Dorf estimates that it took 20,000 years to cover the 27 forests, for new forests to grow, and then cover them again (p. 108).

Fritz discusses the stratigraphic framework of this section of Yellowstone National Park (1980a, pp. 1-18). Fritz concludes:

> Due to the complex alluvial system responsible for deposition of the Lamar River Formation, it is impossible to determine the number of layers of "forests" or to tell how many times surrounding volcanoes erupted. (1980a, p. 16)

Coffin (1976) does not list anywhere near 15 layers:

> On Specimen Ridge, only two levels contained sufficient prostrate logs for measurements (one of the two with only three specimens). Mt. Norris yielded two adjacent levels of prostrate trees although one level contained only two specimens and has not been included in the text … Measurements were taken on three levels in the Fossil forest. (pp. 539-543)

When Mount St. Helens (in Washington state) erupted on May 18, 1980, extensive mud flows carried whole forests to regions below the peak. These trees were deposited in various positions, some upright, some horizontal, and some diagonal. These trees were deposited in layers almost identical to those of Yellowstone. Fritz discusses this extensively with a number of photographs (1980c, pp. 586-588). After the eruption of Mount St. Helens geologists had to change a number of ideas about the deposition of sediment. (Their former ideas were based upon uniformitarian assumptions.)

The manner that the petrified wood is found in Yellowstone is in total harmony with what one would expect from logs that

were transported great distances and deposited on mountains that were formed by volcanic eruptions. The logs are oriented in the same direction, in many instances. The stumps are deposited upright, in many instances. Coffin (1983, p. 298) cites a number of sources who have observed upright stumps (even trees) floating in the ocean, in streams, and in lakes. The petrified trees of Yellowstone are without bark which is peculiar for trees such as the *Sequoia.*

> Commonly, the wood has been coated with mud of a composition similar to the matrix of the mud-flow conglomerates. The bark has generally not been preserved, a peculiar condition for trees like *Sequoia* with thick resistant bark. (Fritz, 1980b, p. 312)

The absence of bark would conform to the contention that these trees were transported great distances and the trees, by their rolling motion and incessant rubbing against other trees, lost their bark.

In addition, these trees are identified as being of tropical, sub-tropical, and temperate origin.

> More than 100 species of fossil plants, 75 percent of them dicotyledonous,[294] have been identified from beds along the Lamar River, chiefly from leaves in finer sediments of the formation containing the fossil forests. This leaf flora has predominantly warm- temperate and subtropical affinites but includes forms with modern relatives in the tropics. (Wheeler, *et al.*, 1977, p. 280)

Most of the identification of the fossil trees is from the leaves and pollen.

> Some fossils are assignable to extant genera, others to families; still others cannot be reliably placed in any extant taxa. Most of the information on Paleogene plants comes from the study of leaves and pollen, rather than wood. (Wheeler, *et al.*, 1977, p. 298)

Another proof that the trees are from different climates is the

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[294] Dicotyledon: any of a class or subclass (Magnoliopsida or Dicotyledoneae) of angiospermous plants that produce an embryo with two cotyledons and usually have floral organs arranged in cycles of four or five and leaves that reticulate venation.

presence and absence of growth rings.

> Some of the woods have well-defined growth rings with marked changes in vessel diameter and arrangement within a growth ring; the species of *lauraceous* wood, however, lacks distinct growth rings, a characteristic not associated with temperate regions. (Wheeler, *et al.*, 1977, p. 298)

In a later article Wheeler, *et al.* state:

> Two of the woods, *Cyrilloxylon eocenicum* and *Prunus gummosa*, have structural features (semi-ring porosity and spiral thickenings, respectively) which are generally found in the extant representatives that grow in higher latitudes. In contrast, *Turpinia lamarense* has indistinct growth rings, a characteristic considered to be indicative of more tropical conditions. (1978, p. 20)

This is easily explained by a tidal flood which brought the different types of trees together but is not easily explained by uniformitarian geology.

Picture 2 Petrified tree - Arizona, USA

Picture 3 Marion Fox and petrified tree - Arizona, USA

Conclusion

From the evidence set forth in this chapter it is evident that the Universe, Sun, Earth, and Moon are quite young. There is no compelling evidence that proves the Universe (or anything in it) is over a few thousand years old.

POSTDILUVIAN FIRES

CHAPTER FIFTEEN

Introduction

I don't see any biblical evidence of postdiluvian fires (unless it is Job 6:15-16). If these fires occurred the primary evidence is geological from the sediments. This author contends that fires almost certainly occurred during the time that the flood waters had ceased to cover the Earth. Immense amounts of organic matter would have been consumed by these fires, and they would have aided the Earth in the transformation to the postdiluvian environment.

Evidence and Possible Causes of Fires

The clay in the sediment of the K-T (Cretaceous-Tertiary) boundary contains several anomalies that can be explained by the explanations of the flood set forth in this book. This boundary contains much larger amounts of several elements than is normally found in the surface of the Earth. These elements are iridium and the other elements in the same class[295] of elements. These elements are found in abundance in asteroids, meteorites, and comets. The presence of iridium was discussed extensively in Chapter 2 of this treatise (cf. p. 20, etc.).

The iridium anomaly is usually explained by AAOEC scientists in one of three ways. *First*, some claim that this anomaly was caused by the death of organic matter that concentrate iridium. *Second*, some claim this anomaly was caused by the impact of an asteroid (or perhaps a comet or several comets) which, it is claimed, also caused fires on a global scale. *Third*, some claim this anomaly was caused by volcanic eruptions.

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[295] The platinum group metals (platinum, palladium, rhodium, iridium, and osmium).

The Volcanic Theory

There are at least two types of volcanoes. The *first* type is an explosive type in which the liquid rock (called felsic lava) solidifies and "plugs up the vent" from which the lava flows. This causes pressure to build up in the vent and an explosion finally occurs. The *second* type has a free-flowing lava (called basaltic lava) which remains molten until it has flowed freely from the vent. This type does not "plug up the vent" and cause an explosion. Mount St. Helens in Washington State is an excellent example of the first type. Kilauea in Hawaii is an excellent example of the second type of volcano.

Officer and Drake discuss two of these theories (the volcanic and the impact theories) without coming to a definite conclusion (pp. S-45 through S-46). Crocket *et al.* argue for volcanic eruptions creating the iridium anomaly (pp. 77-80). Their reason for claiming this anomaly was of volcanic origin is because this anomaly extends over a range of almost 5 meters of shale. This shale extends both above and below the K-T boundary. Crocket *et al.* assume the shale took about 1 million years to deposit (based upon uniformitarian assumptions). If these assumptions are wrong, this iridium could have come from extraterrestrial sources. Other AAOEC are forced to accept the volcanic origin theory because they assume the shale could not have been deposited in a matter of a few days. If it is proven that the iridium anomaly was caused by the impact of a bolide, the layer of shale of over 4 meters thickness was laid in a very short period of time ($t < 1$ year). This is evident because the iridium would settle out of the atmosphere in a matter of a few weeks after the impact.

The claim that the iridium anomaly was produced by volcanism derives evidence from the wrong kind of volcano.

> Ir can be concentrated in the volatile components associated with basaltic volcanism, although they do not imply that Hawaiian-style eruption represents a mode of physical volcanism appropriate to K/T boundary phenomena. (Crocket, *et al.*, p. 80)

In order to support the theory that the iridium (Ir) originated

with volcanic sources there needs to be volcanoes with felsic lava (explosive volcanoes) with high levels of iridium in the lava. This has not been found and there is no evidence to support the volcanic theory. Basaltic volcanism might spread the iridium, if it had floodwaters overflowing the volcano.

The Organic Matter Theory

There are several organisms that concentrate iridium and which would give a possible explanation of at least some of the iridium anomalies. Dyer, *et al.* list several microorganisms that either enhance, erase, or disperse iridium. These organisms are: *Thiodacillus ferroxidans*, *metallogenium symbioticum*, *cyanobacteria* (*plectonema*, *aphanotheca*, *phormidium*, *lyngbya*, *microcoleus*, and *oscillitoria*), *bacillus*, and *penicillium chrysogenum* (pp. 1036-1039). Some of these organisms remove iridium from solution in a matter of a few hours, others taking only a few days (from three to six days). All of these time intervals would allow for the concentration of iridium during the flood by these organisms if the iridium came from either volcanic emissions or meteorites

Hurley and Van der Voo link the cyanobacteria frutexites with the iridium anomalies (p. 294). Hurley and Van der Voo claim to have found evidence of five magnetic field reversals in the sediment. They say:

> The five polarity reversals in the Frutexites bed occur over a stratigraphic interval of 14.5 cm. If this layer was deposited at a rate of 0.6 mm/ka[296], then the interval represents about 250 ka. (p. 294)

This rate of sedimentation is ridiculously small (0.6 mm/thousand years). This amounts to an average of 0.0236 inches/thousand years of sediment being deposited! Obviously, this was deposited during the flood and the apparent magnetic field reversals were made by the planet Mercury as it passed the Earth (cf. pp. 188-ff.).

Holser, *et al.* link an iridium anomaly at the Permian/Triassic

[296] Millimeters per thousand years (ka = kilo-annum).

boundary with organic sources. They state: "Accumulation of metals may have been aided by algae, whose presence is suggested by the lamellar textures seen in this interval." (p. 43) They link this anomaly with volcanic activity and a regression of the sea level.

Wallace, *et al.* link the iridium anomaly to the presence of iridium in seawater and to organic matter.

> The nonchondritic element ratios and the abundance of elements known to be mobile at low temperatures therefore suggest that element anomalies at the ferruginous[297] stromatolitic[298] horizons are not of extraterrestrial origin. In addition, ferruginous crusts that have grown downward from the roofs of cavities are also enriched in precious metals. Such crusts could not have accumulated large quantities of cosmic dust or other impact-derived Ir-rich particles, and this suggests that the platinum metals have been derived from solution (i.e., seawater). (p. 553)

If these, or at least some of these, anomalies were derived from seawater, they could have easily been deposited during the flood – because it was tidal in nature. If these organisms could remove iridium in a matter of hours or even a few days, these deposits could still be of extraterrestrial origin (deposited by the "windows of heaven" during the flood).

The Impact Theory

The presence of charcoal and soot in the sediments (Anonymous #21, *Sky and Telescope*, December 1988, p. 605) needs to be explored more fully. It is possible that this soot and charcoal were deposited after the flood by fires resulting from lightning, volcanoes, and/or other sources that burned the debris left by the flood. The other sources might have been meteorites that were fragments of the planetary rings that circled Mercury and were lost to Mercury during the year of the flood. These rings would continue to circle the Earth-Moon system and impact the Earth and Moon (cf. pp. 322 and 589-

[297] Ferruginous: of, relating to, or containing iron.
[298] Stromatolite is a laminated sedimentary fossil formed from layers of blue-green algae.

590). They would likely be in geocentric orbits and not in heliocentric orbits. Impacts on the Moon would cause small impact craters and supply a layer of dust on the Moon. Impacts upon the Earth would cause molten rock to strike the Earth and burn the dead organic debris that covered large sections of the Earth as the waters began to assuage (Gen. 8:1-5). Lewis has an extensive list of meteorite impacts that caused fires (pp. 176-182).

Donovan admits that the iridium anomaly at the K-T boundary is probably extraterrestrial in origin.

> At present, however, there is still a very large body of data to support an extraterrestrial influence on the Cretaceous-Tertiary mass extinction. It is the only extinction that cannot be attributed to earthly causes. (p. 332)

Dyer *et al.* state: "In approximately 75 K/T boundary locations worldwide, levels of iridium greater than background by factors of 30 to 300 have been demonstrated." (p. 1036) The *background* level of iridium is the amount of iridium that would be expected to be found in the soil without extraterrestrial (meteorite, comets, etc.) influence.

Dyer *et al.* give additional reasons to think that there was a meteorite (meteorites) impact, at least on one occasion:

> The trace-element chemistry (including iridium) at some boundary locations resembles the chemistry of a chondritic meteorite. Petrograhic features such as microspherules, shocked quartz, and sanidine[299] are found at K/T boundaries worldwide. These observations support a hypothesis that at 65 Ma[300], a chondritic meteorite collided with Earth. (p. 1036)

One problem with the impact theory is that living trees do not

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[299] Sanidine is a colorless or whitish monoclinic mineral of the feldspar group with disordered Al-Si arrangement occurring in glassy, prismatic crystals. It is of common occurrence in acidic and alkaline volcanic and plutonic igneous rocks. (*Al is the chemical abbreviation for aluminum and Si is the chemical abbreviation for silicon.*)

[300] Million annum (million years) before the present – before 1950 AD.

burn easily. In order to solve this problem some have theorized that the impact killed trees in a large area and then the fire spread over these dead trees and killed other trees by the air pollution. This theory implies that the iridium should be in the lower layers of the sediment with soot and charcoal being in upper levels without any iridium (Ir). Wolbach, *et al.* 1988, graphed the iridium in the boundary clay and determined that:

> … soot accompanied Ir even in the first fallout fraction; both rise more than 200-fold in the bottom 0.3 cm of the boundary clay and then decline. Apparently the fire started well before all the ejecta had settled. (p. 667)

Cowen states: "Unlike soot and smoke, which probably washed out of the lower atmosphere in six months." (1996, p. 38) If the soot and smoke washed out of the atmosphere in six months, it is evident that the bottom 0.3 cm of the boundary clay was laid in less than six months.

The impact theory requires that the boundary rocks contain "shock generated rocks." These rocks are absent in some of the boundaries which contain iridium but are present in other boundaries (i.e. the K-T boundary has these rocks).

> Subsequently, it has been found that greatly enhanced levels of iridium are associated with the plume from present day eruptions of Kilauea volcano and that shocked minerals are associated with volcanic eruptions. (Officer and Drake, 1989, p. S-45)

If the impacts occurred during the flood, the water would prevent *shock generated rocks* from occurring. Iridium would be present without *shock generated rocks* if the impacts were concurrent with the flood.

Other Evidence of an Impact

The Chicxulub crater in the Yucatan peninsula is one crater which gives evidence of an impact. There is evidence of a tsunami wave (improperly called a tidal wave) near the Brazos River in Texas. Tsunami waves are either produced by

earthquakes, explosive volcanoes, submarine landslides, or impacts of bolides in the ocean. Since there is no evidence of volcanic ash in the sediments or on the ocean floor the explosive volcano can be ruled out. This gives evidence of either a massive earthquake, a submarine landslide, or the impact of a bolide on the ocean. The presence of iridium makes it appear that the tsunami was created by a bolide. According to Bourgeois *et al.* (pp. 567-570), the tsunami produced a layer of sandstone with an average thickness of 70 cm (*2.3 feet*) which is above a layer of mudstone with a thickness of more than 10 meters (*32.8 feet*) and has another layer of mudstone with a thickness of from 1 to 4 meters (*3.28 to 13.12 feet*).

> The basal, coarse-grained sandstone is rich in shell fragments, glauconite and phosphate pellets, fish teeth, wood debris, rounded clasts[301] of calcareous mudstone, and angular clasts of mudstone that are commonly >5 cm (*2 inches – MRF*) across. (Bourgeois *et al.*, p. 568)

This mudstone and sandstone was deposited rapidly.

> We estimate that the graded sandstone was deposited in about 1 day. The overlying 20 to 30 cm of mudstone could have been deposited within a few weeks of the initiating event, or longer; the absence of macrofauna in this mudstone suggests that it was also deposited rapidly. (Bourgeois *et al.*, p. 569)

This rapid deposition conforms with the flood model set forth by this author (FFM) and certainly contradicts the uniformitarian model (AAOECGM).

On June 30, 1908, at 7:00 AM a giant fireball flashed in the sky and flattened an area of forest in the Tunguska Valley of Siberia with a diameter of over 25 miles (*about 40 kilometers*). Most scientists think this explosion was caused by a small comet entering the Earth's atmosphere, but some think it was a meteorite. There were no impact craters – Lake Cheko is probably not a crater. "The only significant clues were microscopic spherules, some composed of glass and others of metal." (Glass and Heezen, p. 33) These spherules are called

[301] Clast = a fragment of rock.

tektites.[302]

> Our samplings from the ocean bottom indicate that at least a quarter-billion tons of glassy material was strewn over nearly a tenth of the earth's surface. Undoubtedly a cosmic collision that deposited this amount of material would have caused fantastic destruction of animal and plant life in the area, and it could have raised tidal waves[303] that swept over shores through the world. (Glass and Heezen, p. 34)
>
> Tektites were melted and deposited 700,000 years ago in the Far East, 15 million years ago in Czechoslovakia and 35 million years ago in North America and Libya. (Glass and Heezen, p. 37)

Glass and Heezen claim these tektites came from the same source. They are wrong on the dates of the depositions of the tektites but are probably correct on the sources. These tektites probably came from the rings of the planet that caused the flood. They were deposited during the flood when the many layers of sedimentary rocks were being laid down.

There was a radiocarbon anomaly that occurred the year after the Tunguska Valley impact (1909). Brown and Hughes state:

> One of the major stumbling blocks of the cometary impact hypothesis is the ^{14}C anomaly that is said to have occurred in 1909 … the ^{14}C activity was higher in that year than normal and deviated from the mean by over two standard deviations. (p. 513)

Brown and Hughes claim that a cometary impact would generate enough energy to form neutrons with sufficient energy to cause the radiocarbon anomaly:

> We conclude, therefore, that within the uncertainties of the effect of chemical composition on collective plasma acceleration processes and on collisional neutron production, the number of neutrons expected in the Tunguska impact, as scaled from solar flares, is in remarkably good agreement with the radiocarbon data requirements. (pp. 513-514)

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[302] Tektites are glassy bodies of probably meteoritic origin and of rounded but indefinite shape.

[303] They mislabel a tsunami as a tidal wave.

The only alternatives to the cometary and meteorite impact theories of the Tunguska site is to claim that it was either a nuclear explosion (caused by antimatter striking the Earth) or that it was caused by an alien spaceship. Since neither of these two explanations have a very high degree of probability of having occurred the cometary impact theory is the most widely accepted theory for the Tunguska site.

Bekov, *et al.* determined that other elements, in the platinum group, particularly "rhodium," were anomalously high. They found the concentration of rhodium to be at least two orders of magnitude[304] higher than background. Because this element is rare in the Earth's crust (found only in ultramafic[305] rocks and copper-nickel ore deposits), this anomaly cannot be of a terrestrial origin. They state that:

> … the Rh[306] concentrations observed in the K/T boundary deposits can readily be explained by the presence of extraterrestrial material, which on average (chondritic material) contains 150-500 (ng g^{-1})[307] of Rh, that is, by at least three orders of magnitude more than the rocks of the Earth's crust. (Bekov, *et al.*, p. 147)

They assert that the only plausible explanation of this rhodium anomaly is from chondritic meteorite material.

There have been at least three asteroids that have passed within 170,000 kilometers of the Earth in the last five years. The cosmic body 1991 BA passed within 170,000 km of the Earth on January 18, 1991. The cosmic body 1993 KA_2 passed within 150,000 km of the Earth on May 20, 1993. The cosmic body ES_1 passed within 160,000 km of the Earth on March 15, 1994 (cf. Anonymous #22, *Sky & Telescope*, p. 13). Over 37,000 near Earth asteroids have been found as of December 2024:

> 163 asteroids crossing Earth's orbit had been found. The largest 1627 Ivar, is approximately 8 km across. Recent

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[304] One order of magnitude is 10 times the other value and two orders of magnitude is 10 times 10 (100) times the other value.
[305] Ultramafic rocks are very low in silica and rich in iron and magnesium minerals.
[306] Rhodium.
[307] Nanogram per gram.

> improvements in detection techniques will uncover dozens more near-Earth asteroids every year. (Anonymous #23, *Astronomy*, p. 18) This was in 1994 – MRF.

It is evident that a number of asteroids have come close enough to cause extensive damage by impact. It is certainly possible for such an event to occur. It is possible that these asteroids are the remnants of the rings of the planet that caused the flood or that the planet was not Mercury and that it came within Roche's limit (cf. pp. 161-ff.) of the Earth and fragmented. These fragments could have impacted Earth, the Moon, Venus, and/or Mercury. I do not think that this is a very likely possibility.

Iridium as Evidence of a Tidal Flood

The evidence easily fits the hypothesis (FFM) set forth in this treatise. *First*, the organic materials were killed by the flood and left lying on the ground. *Second*, the flood waters receded from the Earth and the organic matter dried out. *Third*, the remnants of the rings of Mercury returned to the Earth over 200 days after the flood began. These meteorites, and/or the eruptions of volcanoes, probably caused fires in the dried wood and these fires spread as the flood waters receded.

It is the contention of this author that the iridium anomalies supply evidence that the flood was caused by the phenomena that this author has set forth in this treatise. The rings of the planet that probably caused the flood were, no doubt, made up of both ice, dust, and rocks. If these particles were attracted toward the Earth, these particles would "rain down" through the windows of the heavens upon the Earth. This dust and the small rocks would contain the same basic elements that are in meteorites and would account for the iridium anomalies.

In Dob's Linn, Scotland:

> Iridium concentrations lie in the range 0.050 to 0.250 parts per 10^9 (p.p.b.)[308] through a rock thickness, from the late Ordovician into the early Silurian,[309] equivalent to 20

[308] p.p.b. = parts per billion = parts per 1,000 million.

[309] The Silurian is a period in uniformitarian geology between the Ordovician

> million years. There is no iridium peak at the boundary. Rather, the amount of iridium at every horizon sampled is unusually high. (Donovan, p. 331)

This dating of the rock at 20 million years is based upon uniformitarian assumptions. AAOEC would have us to think that for 20 million years this region has a steady-continuous influx of iridium – this is uniformitarianism gone-to-seed. If this rock was laid during the flood, it contained increased levels of iridium from either organic, volcanic, and/or meteoritic sources. This gives additional evidence that the contention of this author that the flood was caused by a planetary body with rings is true. This anomaly is easily explained by the rings of the planet being attracted to the Earth during the three and one-half passes of the Earth and not for 20 million years of steady-continuous influx of iridium.

The iridium in the K-T boundary (a boundary laid in the last stages of the flood [refer to footnote 19]) came from fragments of the rings which were separated from Mercury when Mercury left Earth's Hill Sphere and went into orbit around the Sun. These fragments were closer to the Earth and were attracted back toward the Earth. They probably caused worldwide fires and the iridium anomaly at the K-T boundary.

Elliot *et al.* link the iridium anomaly to some kind of flooding event:

> The Mg[310] and Fe[311] peaks are interpreted to reflect mainly higher glauconite concentrations within this interval. The lowest sample of high Fe and Mg is also the first sample with Ir[312] concentrations above background (80 pg/g[313] Ir at 9.1 m). It would appear that 9.1 m is the depth, within the sedimentary strata, to which there was significant physical (including bioturbation) and/or chemical communication between sediments and the surface environment at the time Ir deposition began … The interpretation of the 9.7 m

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and Devonian in which the first land plants were supposed to have evolved.

[310] Magnesium.

[311] Iron.

[312] Iridium.

[313] Picogram per gram.

> level as a flooding event is consistent with increasing glauconite content above 9.0 m, which itself is consistent with open-shelf conditions during a marine transgression. (p. 677)

The reader should not interpret this to mean that Elliot *et al.* are claiming that the biblical flood deposited this sediment.

The Effects of Worldwide Postdiluvian Fires

Postdiluvian fires would release heat that would moderate the temperature of the Earth. These fires would also release large amounts of CO_2 that would create a greenhouse effect. This greenhouse effect would begin to raise the Earth's temperature.

> Lastly, the CO_2 accompanying the soot (~900 p.p.m)[314] would increase the greenhouse effect due to water vapour (~8°C) by another ~9°C. (Wolbach; Gilmour; *et al.*, 1988, p. 669)

The bitter cold caused by the cosmic ice in the ice caps would be partially moderated by these fires.

The smoke would block the Sun's rays for a few months, but the darkness of the atmosphere would cause the atmosphere to warm up greatly. The fires on the surface would more than offset the loss of heat from the Sun. It is the contention of this author that these fires probably occurred during the period of time after the flood waters began to decrease (Gen. 8:8-11) from the Earth and before Noah left the ark. In addition, the soot and charcoal would cover the ice and greatly lower the albedo of the Earth. It is possible that this explains the black ice mentioned in the Book of Job (Job 6:15-16). This would tend to increase the temperature of the Earth in the regions covered by soot and charcoal. The reader should be aware that black objects absorb large amounts of energy from sunlight.

If fires of a worldwide nature occurred, there should be evidence in the sediments. Wolbach; Lewis; *et al.* found evidence in three different sites (Denmark, Spain, and New

[314] p.p.m. = parts per million.

Zealand) of "a worldwide carbon layer. All K-T boundary samples gave about 1 to 2 percent of insoluble black carbonaceous matter." (p. 168) This evidence consisted of soot, charcoal, and kerogen.

> Under the scanning electron microscope, the carbon from all three K-T sites shows a bimodal size distribution. Submicrometer-sized particles dominate by number and even by mass (82 percent in the Danish sample). Most show the characteristic morphology of carbon deposited from flames, such as soot or carbon black: irregular, fluffy, often chainlike clusters of spheroids … They resemble charcoal from forest fires or marine sediments, which is also derived from wildfires … The spheroid clusters presumably formed in hot gas or flame, as no other process is known to produce this morphology. (Wolbach; Lewis; *et al.*, p. 168)

Since 1985 (when Wolbach; Lewis; *et al.* conducted their research) other sites have yielded the same evidence.

Large amounts of carbon dioxide CO_2 would have been required to stimulate the growth of plants. In fact, the carbon dioxide presently being released by the burning of so-called fossil fuels – oil, coal, gasoline, natural gas, etc. – is causing forests to grow in the northern hemisphere (cf. Ciais, *et al.*, pp. 1096-1102). Some of the worries about greenhouse warming from the CO_2 emissions might be unfounded because the CO_2 might stimulate the growth of plants and actually benefit mankind. This was probably one of God's ways of rejuvenating the Earth after the great flood.

All the plants which grew during this period of time would absorb large amounts of CO_2 which was composed mostly of either carbon 12 ($_6C^{12}$) or carbon 13 ($_6C^{13}$) which are both stable isotopes of carbon. This would make them appear to be quite old when dated by radiocarbon dating techniques. In addition, the CO_2 from volcanoes during this period would not contain radiocarbon that would cause the trees to "look older than their true age." The impact of the meteorites and ice particles might produce carbon 14 ($_6C^{14}$) and greatly increase the amount of radiocarbon in the atmosphere in a short period of time. This is what Brown and Hughes claim happened in the

Tunguska impact (cf. pp. 281-282 for more information). This could account for whatever carbon 14 is in these specimens. It is neither possible to quantify the amount of carbon 12 ($_6C^{12}$) or carbon 13 ($_6C^{13}$) that entered the atmosphere through the fires and volcanoes nor the amount of carbon 14 ($_6C^{14}$) that entered through the impact of the meteorites and ice particles during this period of time.

A number of plants require fires for their seeds to germinate (lodgepole pine, eucalyptus, banksia, etc.). These fires provided the necessary conditions for these seeds to sprout.

When plant debris (brush, trees, grass, etc.) is burned, the fire releases several minerals that enhance the growth of plants (nitrogen, calcium, potassium, magnesium, manganese, sodium, phosphorus, etc.). This worldwide burning of plant debris aided the growth of all sorts of plants (vegetation).

Concluding Remarks

These three theories might all be partially true. It is the contention of this author that the events that brought about the flood also brought about volcanism, meteorite showers, and the demise of a number of organisms in short periods of time. Both volcanism and meteorite impacts were simultaneous (or virtually simultaneous). The fires could have been started by either volcanism, meteorites, lightning, or by a combination of these. It is possible that some organisms concentrated the iridium and were then deposited in the sedimentary rock. These volcanoes continue to erupt on a decreasing level in modern times. The AAOEC wrongly contends that the K-T boundary clays were deposited over a period of several hundred thousand years. "The time interval represented by 250 cm is of the order 10^5 yr., for an assumed sedimentation rate of 102 cm kyr^{-1}." (Wolbach, *et al.*, 1988, p. 667) This author contends that they were deposited over a much shorter time period (a few weeks or a few days).

SUMMARY OF HOW THE FLOOD OCCURRED

CHAPTER SIXTEEN

Introduction

This treatise has given evidence that the flood of Genesis 6-9 was brought about by God when He brought a planet (probably Mercury) with ice rings (and possibly ice moonlets) close to the Earth. The planet approached Earth above the ecliptic plane when the Earth was near aphelion (cf. Figure 1 p. 106). This planet caused tidal actions which upset the isostasy (cf. pp. 175-ff.) of the Earth. The magnetic and gravity fields of the planet and the Earth interacted and shifted both the planet and Earth upon their axes. The ice rings were attracted toward the Earth by the Earth's greater gravitational field. This probably greatly increased the eccentricity (cf. Footnote 166 p. 180) of the orbits of the ice rings. This increased eccentricity caused parts of the rings to impact on the planet (Mercury) and the Moon. In addition, the ice rings were deposited symmetrically about the magnetic poles of the Earth. As the planet approached above the ecliptic plane the ice from the rings were first deposited upon the North American continent and then parts of the rings were deposited on the Eurasian and Australian land masses. This asymmetrical deposition of the ice upset the isostasy (cf. p. 175) and from Pascal's Law (cf. p. 178) the crust of the Earth was fractured. This asymmetrical deposition of the ice upon the Earth also upset the angular momentum (cf. p. 106) of the Earth and caused the crust (shell) of the Earth to move on the mantle to adjust for the change in the angular momentum. This is one of the mechanisms that produced both rifts and mountains in the crust of the Earth.

The impacts of both meteorites and large chunks of ice caused impact craters and antipodes on the opposite side of the Earth. If the impact was perpendicular to the Earth, the antipode would be on the opposite side of the earth. If the impact was at an angle, the antipode would be found with vector forces. The early antipode models were based upon an assumed

spherical shape of the Earth and the antipodes were off from the predicted locations. A new (more accurate) model that is based upon the fact that the Earth is oblate more accurately predicts the locations of the antipodes was developed at Princeton University.[315] Antipodes have been found on both the Earth, the Moon, Mercury,[316] Mars,[317] and on the moons of some of the Jovian planets.[318]

The tidal friction which occurred during the flood slowed the rotational speed of the Earth (cf. pp. 106-107) and changed the oblateness of the Earth (cf. p. 204). The change in the oblateness of the Earth resulted in a decrease in the equatorial radius of the Earth and caused some of the crust of the Earth to be elevated (raising some mountains [cf. p. 210]). The gravitational field of Mercury also elevated some mountain ranges as it approached the Earth (cf. pp. 108-109). Some other mountains were produced by volcanic activity. Other mountains were formed by plates being pulled (by Mercury's gravity) over the edge of other plates (these are called fold mountains).

Volcanic activity occurred simultaneously with the flood (cf. p. 203). This volcanic activity in conjunction with the ice coming through the windows of heaven caused the water vapor canopy to rain (40 days) out of the upper atmosphere. The loss of this canopy, along with the loss of fertility of the soil, the confinement of minerals in the sediments (*minerals essential to life*), and the decaying magnetic field, caused the postdiluvian conditions to be so different than the antediluvian conditions that some plants and animals became extinct or were unable to survive in the postdiluvian environment. These conditions reduced the longevity of all living organisms, including man. In addition, these conditions reduced the size of many plants and animals.

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[315] https://www.princeton.edu/news/2011/10/19/impact-study-princeton-model-shows-fallout-giant-meteorite-strike
[316] 1092.PDF (usra.edu)
[317] http://www.newgeology.us/presentation35.html
[318] www.sciencedirect.com/science/article/abs/pii/001910359190170X

The planet probably escaped the domination of the Earth's gravity by two factors: (1) "the slingshot effect" (cf. Figure 8 p. 184) when the gravity of the Sun was aided by the gravity of Venus in inferior conjunction with the Earth,[319] and perhaps the gravity of Jupiter (in superior conjunction[320] with the Earth)[321] the planet (Mercury) was pulled away from its Earth orbit – moved outside the Earth's *Hill sphere*[322] (cf. Souami, et al.). (If this were true, 150 days before this, these planets would have been approximately in alignment[323] – pulling Mercury toward the Earth.) And (2) the transfer of angular momentum (cf. pp. 106-107) from the Earth to Mercury as it caused the flood as the rotational speed of the Earth decreased. This transfer of angular momentum increased the speed of Mercury. As Mercury passed around Venus[324] it probably caused Venus to rotate in a retrograde manner – slowing Mercury down (allowing it to go into its present orbit).

At, or near, the end of the flood, fragments of the planetary rings returned to the Earth to bombard both the Earth and the Moon with meteorites. Some of these meteorites were probably quite large (several hundred meters in diameter) and struck the Earth. At least one object caused a tsunami wave which left alternating layers of mudstone and sandstone in Texas (cf. the quote of Bourgeois *et al.* on p. 359-360). These meteorites probably caused the wood and other organic matter left by the flood to burn; this affected the climate for several years after the flood (cf. Anonymous #24, *Sky & Telescope*, 1988, p. 605).

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[319] Inferior conjunction is when a planet passes approximately between the Earth and the Sun.

[320] The planet lies on the opposite side of the Sun from the Earth.

[321] It is possible that some (or all) of the other Jovian planets and/or Mars were also in superior conjunction with the Earth at this time.

[322] The *Hill sphere* radius of the Earth is about 1.5 million kilometers = 932,000 miles.

[323] Earth being in inferior conjunction with Jupiter and possibly some of the other Jovian planets and/or Mars.

[324] It is possible that Venus was tidally locked with the Sun at this time. This would explain how Venus rotated in a retrograde manner after its interaction with Mercury. This would explain the clusters of craters on Venus in parabolic patterns (Burnham, pp. 35-36 – quoted on pp. 183-184).

Correlation Does Not Prove Cause and Effect

Correlation is used by statisticians to test scientific hypotheses. The method used by scientists is strange to non-scientists. The scientist will attempt to disprove the hypothesis and if he fails to disprove it, he has not proven the converse (cf. Fox, 2024, Chapter 12 and Appendix Q). Raup says: "that geology and paleontology are historical sciences … and that these sciences rely largely on statistical inference." (March 1983, p. 20)

Some AAOEC have wrongly thought the coincidence of actions proves a cause-and-effect. Correlation does not prove cause-and-effect. Isaac and Michael correctly state:

> Science is ultimately concerned with identifying cause-and-effect relationships. Since such relationships are always correlated, there is a strong tendency to reverse the process and infer cause-and-effect status between two or more variables based on an established correlation coefficient. The danger is clear: *correlation does not necessarily imply causation.* Two variables simply may be correlated with a third variable, as in the case of a positive correlation between water temperature and the incidence of drownings along the coast of California. It is incorrect to conclude that warm ocean water is more dangerous and the explanation lies in the obvious fact that more people go swimming when the water is warm, an activity increasing the exposure factor. (p. 196)

The correlation of the decrease in oxygen content in the atmosphere, decrease in the barometric pressure of the atmosphere, deposition of sediment, extinction of organisms, apparent reversals of the Earth's magnetic field, etc., were only coincident events brought about by the same phenomena rather than the cause of an ice age, orogenesis, etc. Correlation is a necessary condition (cf. p. 15) for cause-and-effect, but not a sufficient condition. Linton and Gallo correctly state:

> In interpreting correlations, one caution is imperative. When you find evidence for the existence of a relationship, you have not found evidence that one factor "caused" the

other … In many cases, both factors are themselves caused by yet a third variable … In general, causative statements are inappropriate in the interpretation of correlations and should be avoided. (p. 342)

It should be remembered that a lack of correlation can disprove a cause-and-effect relationship, but the presence of correlation cannot conclusively establish a cause-and-effect relationship. This is illustrated by the fact that there is a positive correlation between the crime rate in the USA and the salaries of most occupations. Who would make the absurd claim that there was a cause-and-effect relationship between the salaries of most occupations and crime?

This might be why the usage of correlation to "cross match" tree rings seems to prove the Earth is over 10,000 years old. The tree-ring widths and other factors used to cross match the trees might correlate because of other factors. One such factor might be the regular (11 year) sunspot cycle which could affect the width of the tree rings. In fact, this is precisely what the astronomer A. E. Douglas expected to find in his initial study of tree rings.

> The first extensive study of tree rings in the United States was begun in 1901 by the astronomer A. E. Douglas … who had hoped to correlate sunspots and climatic changes. His work led to the development of precise tree-ring dating. (Ralph and Michael, p. 555)

If sunspots are periodic,[325] some of the correlation found in tree rings might be from this periodicity. Libby and Lukens claim there is a correlation between sunspot activity and tree-ring widths when they state:

> … that a comparison of recent radiocarbon fluctuations in tree rings with sunspot numbers since 1000 A. D. suggests that a correlation exists between them. (p. 5903)

Varves (cf. p. 300) from one dry lake to another are overlapped and correlated to prove that the glaciers took thousands of years to retreat off the land. Kay and Colbert state:

> The matching of the relative thickness in varves in lakes of

[325] Repeat at regular intervals of time.

> the same drainage basin, the correlation of the laminae in the belief that the correlated layers are synchronous, yields a record of the number of years that water stood in each, and the duration of each with relation to those to the south, and the later lakes to the north. Because of the impossibility of gaining all varves in a single section, the total must be interpreted from the correlation of varves in many sections. Such correlations are difficult to demonstrate as precise, so they have been subject to criticism. In this way it was judged that the ice took several thousand years to retreat northward from Long Island Sound through New England. (p. 596)

Cloud claims there is a correlation between varves and tree rings:

> Tree rings and varves record Earth history year by sidereal[326] year and season by season … Indeed such records can even be correlated by distinctive cyclic events from one continent to another. The Bronze Age varves of southern Russia, for instance, have been correlated with tree-ring records in Turkey and the bristlecone-pine sequence of the western United States. (p. 83)

Sonett and Williams claim there is a correlation between sunspot activity (which is periodic) and varve thickness:

> In general, the varve spectrum qualitatively mimics that of the sunspot index … Varve thickness is positively correlated with the sunspot index … As varve thickness and meteorological variables have previously been shown to be strongly correlated, a direct link between the sunspot index and varve thickness is suggested by way of climate response to solar variations. (p. 12,019)

The correlation of varves from different lakes to attempt to project backwards in time a series of varves (by overlapping them) to go back many thousands of years contains a possible error. It is possible that the correlation is based upon the sunspots rather than on other factors. Perkins and Sims did not find a correlation between the mean annual temperature

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[326] The sidereal year is the time interval for Earth to make one complete revolution around the Sun with respect to any particular star other than the Sun.

outside the region of the lake where the varves were found. "Clearly, there is no evidence of any strong regional correlation between varve thickness and mean annual temperature in locations far removed from Alaska." (p. 317) It is evident that the correlation of varves in lakes far removed from each other might just be the correlation of the sunspot cycle (or something else) rather than any other factor. Since the sunspot cycle appears to be periodic (about 11 years) these varves cannot be overlapped and projected back in time with any degree of certainty.

Three other factors might cause a correlation of varve thickness and tree ring thickness. The *first* factor might be the hundred-year thunderstorm cycle discussed by Libby and Lukens (p. 5902). The *second* factor might be the El Niño effect. There is evidence of El Niño thousands of years ago.[327] Note additional evidence of the El Niño effect.[328] (I don't agree with their dating.) There is a corresponding effect called La Niña. The *third* factor might be the location of the Earth with respect to Jupiter which could affect the climate (cf. pp. 370 and 396). All of these periodical factors could give correlations in both varves and tree rings in different parts of the Earth.

Many AAOEC scientists are irrational in their reasoning. Here is the basic argument of certain scientists:

> First Premise: If there is a cause-and-effect relationship between two things, then there is a correlation between the two things. (This premise is axiomatic.)
>
> Second Premise: There is a correlation between the two things. (This argument is invalid because it contains the logical fallacy of *affirming the consequent*.)
>
> Conclusion: There is a cause-and-effect relationship between two things.

Since this argument is logically invalid, the conclusion is not proven by the argument – all invalid arguments are unsound.

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[327]https://www.ocean.washington.edu/story/Ancient_Shellfish_remains_rewrite_10000_year_history_of_El_Nino_cycles

[328] https://reliefweb.int/report/ecuador/study-shows-record-el-ni%C3%B1o-past-15000-years

Recommendations for Additional Study

The possibility of there being a relationship between the epicenters of terminating earthquakes (Benioff, pp. 334-335) and the mechanisms which probably caused the flood should be considered. The pattern of these epicenters may be related to the shifting of the equator of the Earth from the flood.

> Epicenters of the terminating earthquakes are plotted on a world map in Figure 4.[329] The dashed circle drawn to fit the points is very nearly a great circle and hence defines a plane passing through the center of the earth. The pole of this circle, indicated by the two small concentric circles on the map, is situated approximately at f = 55° N, l = 127° W. It may be mere chance that the six epicenters fall so nearly on a plane. If not, then this plane may define some fundamental shearing surface which divides the earth into hemispheres. (p. 334)

The effects of the flood model postulated in this treatise (FFM) upon the isotopic ratios (cf. p. 304-305) on the Earth should be considered. Each element has different isotopes. Some elements have more than one stable isotope. For example, carbon has two stable isotopes, ${}_6C^{12}$ and ${}_6C^{13}$. The isotope ${}_6C^{13}$ is heavier than the isotope ${}_6C^{12}$ which causes the heavier isotope to settle to the bottom of CO_2 (carbon dioxide) solutions. This same effect occurs in oxygen and other elements. These different isotopes are used to determine the relative temperature of certain fossils. The effects of the events that brought about the flood upon these different isotopes should be considered for future studies. Hsü claims that comets have a different isotopic ratio of carbon than the Earth (1980, pp. 201-203). If Hsü is correct, this method of determining the relative temperature of fossils might be unsound. In all likelihood the water vapor canopy contained large amounts of the lighter stable isotope of oxygen (${}_8O^{16}$) whereas the antediluvian oceans probably contained larger amounts of the heavier stable isotope of oxygen (${}_8O^{18}$). The postdulivian ratio of these isotopes may be considerably

[329] Benioff's Figure 4 is not included in this Volume.

different than the antediluvian ratio.

Farley discusses the stable isotope of helium $_2He^3$ in deep-sea sediment and its relationship to interplanetary dust. Farley claims that this isotope is almost totally derived from interplanetary dust. The ratio of $_2He^3$ to $_2He^4$ is much higher than expected because of the production of $_2He^4$ by both uranium and thorium in these sediments. Both uranium and thorium produce $_2He^4$ as a result of radioactive decay. In addition, the isotope $_2He^3$ should diffuse upward more readily than $_2He^4$ because of its lower weight. This may be further evidence of a younger Earth.

A number of geologists are beginning to link "glacial till"[330] with the impacts of objects from space. Oberbeck, *et al.* (1993a) have an extensive discussion of this impact hypothesis. Grant Young replied to the paper written by Oberbeck *et al.* challenging the basic premises of the paper and Oberbeck *et al.* (1993b) replied to Young. The FFM is easily reconciled with the hypothesis of Oberbeck, and the FFM answers some of the objections of Young. For example, Young states: "In some cases, large thickness variations can be shown to be related to contemporaneous faulting." (p. 675) It is the contention of this author that the faulting, rifting, and volcanic activity were all contemporaneous with the impact of bolides. These bolides (mostly ice) were depositing the glaciers when the rain and fountains of the deep (tidal activity) were all occurring. Oberbeck *et al.* (1993b) state:

> All hypotheses are suspect until predictions based on those hypotheses are made and tested. There are unique criteria for recognition of shock metamorphism produced in minerals beneath impact sites. There are no criteria, however, which are as unique to glaciation or tectonism as shock metamorphism is to impact, that are available to test the hypothesis of glacial or tectonic origin for each tillite/diamictite deposit. Thus, tillite/diamictites may not be as reliably tested for glacial or tectonic origin as for impact origin. Young's suspicion, together with our reply,

[330] Loose rocks of different sizes and composed of different materials.

> should now prompt a search for predicted impact shock metamorphism in the tillite/diamictites; this may permit the possibility of opening a new fruitful area of research which Young acknowledges can sometimes result from radical departures from conventional wisdom. (p. 682)

This is a possible explanation of some problems associated with this author's flood model (cf. this author's discussion of rocks fragmenting when impacted by cosmic ice on p. 145 and the presence of glacial till on p. 141). This author will not venture further into this arena because the research on this question is just beginning. This is a matter that needs to be considered more fully if the additional research recommended by Oberbeck *et al.* (1993b) is conducted.

Rehwinkel makes a claim that should be considered in great detail before one accepts the claims of AAOEC uniformitarian and/or *punctuated uniformitarian* geology:

> As soon as any mass of rock, whether igneous or stratified, is lifted beyond the surface of water, as, e.g., the strata which form the present continents of the world, they immediately become subject to the great forces of erosion, such as rain, frost, wind, the action of rivers, lakes, earthquakes, volcanoes, etc. One should therefore reasonably expect that the rocks exposed to these eroding forces for millions of years ought to show evidence of such erosion on the surface. We should expect to find these "older" strata mutilated and cut into irregularities similar to, or even greater than, those found on the surface of the earth today. We ought to expect to find deep valleys, basins, hills, rugged canyons, and the like, but the strange thing is that such evidence is totally lacking. There is nothing of the kind to mark such erosion. Marks of any disturbance of this nature are wholly absent from the time of the contact between the strata supposedly so vastly different in age. In fact, the "younger" strata follow the "older" in perfect conformity, and they appear as though one had followed the other in natural and uninterrupted succession. (p. 268)

As far as this author can determine, Rehwinkel is correct in his assessment of the nature of geologic formations. The flood model postulated by this author (FFM) would allow for the

existence of erosion in these strata. This would occur because of successive tides that could overflow and partially flow off a continent before the next tide. However, this would probably be the exception rather than the rule. The AAOEC models, either uniformitarianism (cf. p. 18) or infrequent catastrophism (cf. p. 18), demand that this erosion be the general rule. If the AAOEC were to point out that Rehwinkel was a theist, this does not prove that his points are wrong, but it would prove that the AAOEC was irrational – he is committing the *genetic fallacy* of logic (cf. Fox, 2024, p. 198).

Additional research should be done on the effects of large tides upon certain marine organisms (such as corals). Large tides are demanded by the AAOEC old Earth from the recession of the Moon. (This was discussed on pp. 342 and 107-ff.) The effects of large tides on the land masses should also be considered. The large tides demanded by the old Earth model might kill certain corals. Some corals live near the surface and others live deeper. Fairbanks states:

> The Caribbean reef-crest coral *Acropora palmata* (Lamarck) is the best available sea level indicator for Pleistocene studies. This species is generally restricted to the upper five metres of water and dominates the reef-crest community in many locations. (Fairbanks, 1989, p. 637)

These large tides would cause this coral to be above the water level for several hours every day and deeper than it normally can survive at other times

Additional research should be done on the effects of different wavelengths of sunlight on various life-forms and should be considered in light of the flood model set forth in this treatise. It is postulated that the water vapor canopy (the waters above the firmament – Gen. 1:6-8) would prevent harmful wavelengths from reaching the surface of the Earth and would allow the best combination of wavelengths for the health and well-being of all living organisms. The effects of ultraviolet light on eyesight, plant growth, etc. need to be explored. In addition, if organisms evolved (by macroevolution) in an environment with ultraviolet light present, it is in order to ask, "why is ultraviolet light harmful to these organisms?"

Surely some of these organisms would have adapted to the ultraviolet light.

Additional research should be conducted on the effects of the spectrum of light a water vapor canopy would pass. Human eyesight does not optimize the present light spectrum (cf. Soffer, pp. 946-953).

> Many people believe that evolution has produced a human eye whose color sensitivity roughly matches the sunlight spectrum. … the eye is poorly optimized to take full advantage of all the visible and enormous amount of infrared light that is available in the environment. (Soffer, p. 946)

Soffer argues that the vertebrate eye optimizes the solar spectrum after it has passed through water. His argument is based upon the assumption that vertebrates evolved in an aquatic environment. Actually, he might be partially right – since the antediluvian atmosphere contained large amounts of water vapor. The human eye probably optimizes the light in the antediluvian environment.

Note his basic argument:

> First Premise: If vertebrates evolved from marine/aquatic organisms, then their eyesight would optimize light that had passed through water.
>
> Second Premise: Their eyesight optimizes light that had passed through water.
>
> Conclusion: Vertebrates evolved from marine/aquatic organisms.

Of course, this argument contains the logical fallacy of *affirming the consequent*. Therefore, this argument is unsound.

Additional research should be conducted on the reason or reasons why bristlecone pine trees cannot be found living that are over about 4,600 years old. Ralph and Michael state: "Living bristlecone pines have reached the age of about 4,600 years-that is, their innermost rings date to about 2600 BC." (p. 555) This is the approximate date this author has determined for the biblical flood. Why are there no living trees

older than this age? Trees do not die of "old age," but are killed by fires, disease, insects, storms, etc.

Additional research should be conducted on the effects of a reduction in the atmospheric pressure during the forty days of rainfall. From Henry's Law (cf. pp. 70-71) the lowering of the atmospheric pressure should have caused air to come out of the oceans. This is similar to the air that exits a soft drink (one with carbonated water in it) when the cap is removed, and the pressure is lowered. There might be some sort of evidence from the sedimentary rocks, such as air bubbles in the rocks, for this reduction in pressure. This reduction in atmospheric pressure would cause calcium carbonate[331] to precipitate out of the water and be deposited in layers in the sedimentary rocks. Longwell, *et al.* state that a loss of carbon dioxide will cause calcium carbonate to precipitate from the water:

> In each varve one lamina consists of calcium carbonate; the other includes dark-colored organic matter. The rhythm is explained as follows: the sediments were deposited in a lake, which warmed in summer, therefore lost carbon dioxide, and precipitated calcium carbonate from solution … The relatively heavy carbonate sank promptly and formed a summer lamina; the lighter organic matter sank much more slowly. (p. 380)

Calcium carbonate is found in several forms in the sedimentary rocks. "Limestones contain calcium carbonate secreted by organisms or precipitated from supersaturated waters." (Longwell, p. 10) Some AAOEC claim that the depths of the limestones prove that the Earth is billions of years old because they claim it was all secreted by organisms. Note that Longwell says: "… or precipitated by supersaturated waters." (p. 10) The Fox Flood Model would have supersaturated waters to precipitate calcium carbonate during the flood as the barometric pressure dropped over a forty-day period. Other sedimentary rocks which are derived from calcium carbonate include dolomite,[332] wollastonite,[333] diopside,[334] etc. Sumner

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[331] $CaCO_3$
[332] $CaMg(CO_3)_2$
[333] $Ca(Si_2O_6)$
[334] $CaMg(Si_2O_6)$

and Grotzinger relate the precipitation of calcium carbonate with oxygen concentration. It is possible that other chemicals would precipitate out of the flood waters as the barometric pressure changed. Krumbein and Sloss state:

> Calcium carbonate may be precipitated from sea water by inorganic processes. Changes in atmospheric partial pressures of carbon dioxide produce corresponding changes in carbon dioxide solubility. Because of these relations, there is a direct connection between atmospheric carbon dioxide and the amount of dissolved calcium ion in sea water.
>
> If the carbon dioxide dissolved in sea water decreases, some bicarbonate ions change to carbonate, thereby causing precipitation of calcium carbonate. The precipitate forms a fine, crystalline cloud which settles to the bottom.
>
> Observations show that surface water in some warmer parts of the ocean is saturated with calcium carbonate. This suggests that, at present, the warmer seas are potentially large limestone accumulators. That similar conditions may have existed in the past is attested by numerous limestones having relatively dense crystalline texture and a paucity of fossils. (p. 223)

It is possible that gypsum[335] and salt can be precipitated from seawater by the reduction in the barometric pressure. It is possible that the precipitation of salt would occur at a different barometric pressure than gypsum and this would explain why these minerals are in layers. The different temperatures from the cosmic ice would probably affect the precipitation.

Still another factor that needs to be considered is the fact that the changes in the barometric pressure during the first forty days of the flood (when the water vapor-canopy was being dissipated by the forty days of rain) would have killed massive numbers of organisms. This would result in a rapid deposition of organic calcium carbonate during that time. The atheists,

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[335] $CaSO_4 \cdot 2H_2O$

agnostics, and old-Earth creationists (AAOEC) have made uniformitarian assumptions about the deposition of the calcium carbonate.

Cloud and others (cf. pp. 206-207) claim the length of the day was shorter in the past: "Another feature of this interval of Earth history was probably a much shorter day than now." (Cloud, p. 145) Additional research should be conducted on the effects of a shorter day upon living organisms in the antediluvian environment. It is possible that the biological clocks (circadian rhythms) of some organisms are better tuned to this shorter day than to the present 24-hour day.

The extensive cratering of the Moon by the rings of the planet that caused the flood probably changed the albedo of the Moon (reducing it). A reduced albedo for the Moon would decrease the amount of moonlight reaching the Earth. In addition, the absence of clouds in the antediluvian atmosphere would also mean that the moonlight was brighter before the flood than it is now. Additional research should be conducted on both plants and nocturnal animals to determine how the reduced moonlight (of the postdiluvian Earth) affected them.

Patten discusses ice caves of the Frenchman Hills of Grant County, Washington (pp. 120-124). These caves are another phenomenon that the uniformitarians have difficulty explaining. These caves have alternating layers of lava and ice. This ice must have been extremely cold to support a layer of molten lava without melting. These ice caves also exist in Idaho (King, pp. 153-163; Chiang, pp. 165-169) and other parts of the Northwestern United States. Additional research should be conducted to determine if any of these caves are the result of lava flowing out upon extremely cold ice (cosmic ice) without melting the ice (cf. Lescinsky and Sisson, pp. 351-354) – does this ice contain iridium etc.

If Mercury approached the Earth above the ecliptic plane and the Moon orbited the Earth in the ecliptic plane before the flood, then Mercury probably pulled the orbit of the Moon out of the ecliptic plane. This could have also provided a

mechanism for the deposition of ice on the poles of the Moon (at the north pole on the first pass and south pole on subsequent passes). If Mercury approached above the ecliptic plane and the antediluvian Moon orbited the Earth in the ecliptic plane (cf. Figure 6 p. 171), the north pole of the Moon would be cratered from the first pass over the Moon, but the north pole should not have other cratering (or at least it should have minimal cratering at the north pole). The south pole of the Moon should have more cratering. If the Moon revolved around the Earth in the ecliptic plane before the flood, the regular lunar eclipses might have been used to measure the seasons (Gen. 1:14-19). This would have a periodic lunar eclipse (on every revolution of the Moon around the Earth) at or near the equator. This would have the effect of cooling the Earth near the equator about every 28 days – keeping the temperature near the equator from being excessively high.

Additional research needs to be conducted on the possibility of differences in the angular velocity[336] of the core of the Earth and the remainder of the Earth. Kerr states:

> … a team of seismologists announced last week that Earth's solid-iron inner core spins faster than the rest of the planet, gaining almost a tenth of a turn during the past 3 decades. (1996, p. 428)

Song and Richards claim the: "rotation rate is on the order of 1° per year faster than the daily rotation of the mantle and the crust." (p. 221) This claim raises several questions: (1) What mechanism would cause the inner core to rotate faster than the remainder of the Earth? (2) How long will the friction between the inner core and the remainder of the Earth allow a difference between the angular velocity of the inner core and the angular velocity of the remainder of the Earth? (3) How does this relate to the tidal influence of Mercury on the Earth during the 150 days of the tidal activity that possibly decreased the rotational speed of the Earth (cf. p. 208)? (4) Does this relate to the reversals of the Earth's magnetic field (either real or imagined reversals)? The present rotation of the

[336] Angular velocity is the rotational speed of the object (the Earth in this instance).

core at a rate of about 1.2°/year faster than the remainder of the Earth is many orders of magnitude greater than the supposed reversal rate. Is it possible that the Earth's magnetic field is aligned with and related to the core of the Earth and that the core is aligned where it was prior to the flood and that the alignment of the remainder of the Earth (crust etc.) was tilted? Is this why the Earth's magnetic pole wanders? Does the core of the planet Mercury also rotate at a different speed than the remainder of the planet (like the Earth does)?

Additional research needs to be done on the ability of elephants (specifically mammoths) to survive in cold climates. Hapgood (1970, pp. 249-257) makes several arguments designed to prove that mammoths were not adapted to cold climates. This author watched a program on elephants on TV which claimed that young elephants sometimes die in Africa when the temperature becomes "cool" because they are not adapted to cold climates. If mammoths were not adapted to cold climates, the traditional theory of ice ages is unsound. The following link has an option for how elephants deal with cold weather: https://elephantaidinternational.org/elephant-facts/?gclid=EAIaIQobChMIq_LGopu0-gIVcBXUAR0cfgHTEAAYASAAEgKc5fD_BwE

Of course, the AAOEC will claim that the mammoth is a variety of elephant that was adapted (by macroevolution) to cold climates (Yuan). If they were adapted, it was by microevolution as we see with sparrows (Johnston and Selander).

A professor at Harvard University (Professor George Church) is planning to revive mammoths. Here is the link to his plans: https://hms.harvard.edu/news/mammoth-solution If he revives mammoths and they are not tolerant of cold climates, this will create a crisis in interpretation of "the ice ages" by geologists – it will not pose a problem for the FFM.

Additional research needs to be done on the question of whether or not archeologists have ignored evidence that demonstrates that the AAOEC interpretation of archeology is

flawed. Cremo (who is not a Christian and is a macroevolutionist) makes extensive claims that evidence has been ignored. Evidence has already been provided that AAOEC tend to ignore evidence when it contradicts their worldview (cf. pp. 308-313 and Fox, 2024, Appendix V). A number of fossils have been found which are in several layers (strata) of rock (cf. pp. 289 through 295). These polystrate fossils are not mentioned in many recent geology textbooks. Why are they not mentioned? It appears that the atheist/agnostic/old Earth (AAOEC) geologist has ignored evidence that demonstrates that the AAOEC interpretation of geology is flawed.

Additional research needs to be conducted on whether or not arthropoda can survive flooding. Will their eggs survive extended periods of time in a flood? Does the expression "breath of life" (Gen. 6:17 and 7:22) include arthropoda? Arthropoda do not have lungs but breathe by diffusion. This would answer the question of whether or not arthropoda were on the ark.

Additional research needs to be conducted on the trajectories of the tiny comets discovered by Frank (cf. Chapters 13 and 14). Wakefield states:

> the objects moved east and west preferentially across the sunlit face of the Earth. The holes also appeared larger when the spacecraft was at lower altitudes, … they occurred at rates that mimic certain meteor showers. (p. 30)

Kerr states:

> the mesosphere is dampest in summer at high latitude, … why the water abundance varies with latitude and season will require close monitoring of the variations he has already detected in the small-comet bombardment." (1997, p. 1033)

Regarding these objects "Scotti stresses, 'they aren't 10-meter objects coming in on heliocentric trajectories.'" (Wakefield, p. 31) The basic hypothesis of the FFM is that these objects are in geocentric trajectories, not heliocentric trajectories. Is it possible that these are still locked into the time frame of the

beginning of the flood (coming in high latitudes in the summer)?

Additional research should be conducted on the effects of the small comets discovered by Frank (cf. Chapters 13 and 14) on such factors as the ozone layer, the intensity of ultraviolet light that strikes the surface of the Earth, climate patterns, etc. If the intensity of these comet strikes is diminishing, it might affect these factors adversely. This might adversely affect the longevity of both man, animals, and plants.

Additional research should be conducted on any Earth Trojan asteroids that are located at the Earth-Sun Lagrange points L_4 (leading 60°) and L_5 (trailing 60°). Could these asteroids be from the rings or from ejecta of impacts of Mercury?

There have been a number of scientists who claim to have found DNA[337] from dinosaurs.

> Eighteen months ago, Mary Schweitzer, a biology graduate student at Montana State University's Museum of the Rockies, was examining a thin section of Tyrannosaurus Rex bone under her light microscope, when she noticed a series of peculiar structures. Round and tiny and nucleated, they were threaded through the bone like red blood cells in blood vessels. But blood cells in a dinosaur bone should have disappeared eons ago … The bones, after all, are 65 million years old. How could blood cells survive that long? … Schweitzer has already extracted a molecule that might be dinosaur DNA. And their discovery has set off a furious race with other labs to be first to publish on dinosaur genes. (Morell, 1993b, p. 160)

AAOEC claim the DNA molecule should decompose in short periods of time. Morell states:

> … biochemical studies of the rate of decomposition of DNA in solution show that under normal conditions, with typical exposure to air and water, the molecule is seriously degraded if not entirely broken down after 40,000 to 50,000

[337] Deoxyribonucleic acid.

years. (1993, p. 161)[338]

Other scientists claim they have isolated dinosaur DNA from several different sources (coal mines, bone fragments, etc.). If dinosaur DNA has been isolated, the AAOEC has a problem explaining how this molecule survived for over 60 million years.

Michael Greshko authored an article in *National Geographic* (March 3, 2020) that dealt with dinosaur DNA. Greshko cites an article in *National Science Review* that was published earlier in 2020. The article by Bailleul, et al. was published January 12, 2020. This article has 50 references in the bibliography. Black also published an article in April 2020 on dinosaur DNA.

This is discussed by Schweitzer in the You-tube video: https://evolutionnews.org/2022/07/could-we-ever-recover-dinosaur-dna/

This author has no problem explaining the existence of the DNA of dinosaurs. This matter needs to be considered as scientists research this topic.

Warning to Christians!

The discussion of the dinosaur DNA could prove to be a "dead end" and the material found might not be DNA. There is a danger that Christians could be so zealous to prove the AAOEC wrong that they pick up an argument such as this one and use it before the evidence proves it to be sound. The cause of truth is not advanced by unsound arguments. When Christians use unsound arguments in an attempt to either prove that God exists or that the Bible is inerrant, they damage the cause of Christ. The honest truth seeker may see these errors and become suspicious of either their motives, their veracities, or both. Since I wrote this paragraph (over 20 years ago), the evidence seems to be conclusive that dinosaur DNA has been discovered.

[338] It is obvious that this DNA is not 40,000 years old – MRF.

Christians should never surmise evil with regard to the atheist, agnostic, and/or old Earth creationist (AAOEC) because surmising evil is sin (1 Tim. 6:4). Another reason Christians should not surmise evil is because some atheists, agnostics, and old Earth creationists (AAOEC) are honest, but ignorant of the sound arguments that can be advanced for the truth that God exists, the Scriptures are inerrant, etc. If these AAOEC see dishonesty in us they might be turned from the truth – we might become a stumblingblock.

The Postdiluvian Mediterranean Sea

In 1970 a group of scientists drilled in the Mediterranean Sea and drew several conclusions from their drilling. One conclusion was that the Mediterranean had dried up at one time in the past. Kenneth Hsü contended that the water in the Mediterranean basin evaporated and that the basin became a desert (cf. Hsü, 1983). This contention was challenged by D. J. Stanley:

> Our Mediterranean Basin Program team at the Smithsonian Institution, however, does not-in the case of the large western basin during the salinity crisis-confirm depths in excess of 2,500 meters as proposed by Hsü and others, nor does it support a much shallower (200 to 500 meters) basin as indicated by Nesteroff. Rather, our measurements of the western basin indicate moderate bathyal depths, from at least 200 to as deep as 1,500 meters. (p. 23)

Matthews concludes that the Mediterranean basin was a desert which was refilled by a breach in the Strait of Gibraltar (p. 21). He states: "The entire refilling may have taken only a century; it would have dropped the world sea level about 40 feet." (p. 21) If refilling the Mediterranean basin would drop the world sea level by about 40 feet, the evaporation of it and resultant rainfall would have raised the world sea level by about 40 feet. This would at least partially account for a rapid rise in sea level after the flood then a rapid lowering of sea level.

Several other conclusions were drawn from the facts. *First*, there is archeological evidence that the Mediterranean Sea was lower than it is at the present time.

> In 1985, Henri Cosquer, a professional deep-sea diver, discovered a narrow, underwater opening, barely nine feet by three, beneath the base of a cliff rising from the Mediterranean Sea. Located in the Calanque area between Marseille and Cassis, the cave was 110 feet below sea level. (Clottes and Courtin, 1993, p. 64)

This cave had Paleolithic art on the walls, evidence that it was above sea level at one time. Clottes and Courtin claim the:

> … evidence tells us that ancient people went into the Cosquer cave during at least two different periods. During Paleolithic times, the sea level was about 360 feet lower than it is now, and the coast was several miles away from the cliff. (1993, p. 66)

Clottes and Courtin (1996) discuss these caves extensively. *Second*, there is not a sufficient amount of water supplied by the rivers that drain into the Mediterranean Sea and rainfall to replenish the water that evaporates. Cloud states:

> The annual loss of water by evaporation from the Mediterranean surface today exceeds by 3 times that added by all its tributary sources, plus rainfall. (p. 440)

Since this is true it is possible that extensive parts of this region were below sea level. *Third*, there is evidence of extensive evaporation of the Mediterranean.

> Geoscientists have discovered three lakes of extremely salty brine lying in pockets on the floor of the Mediterranean Sea … Oceanographers had previously identified two other brine lakes in the Mediterranean during expeditions a decade ago. (Anonymous #25, Science News, p. 157)

Regarding these brine lakes Wallmann states:

> We calculated the time taken to generate the measured profiles using a simple one-dimensional transport model. Our calculations indicate that the surface sediments have been in contact with $MgCl_2$ brine for over 2,000 years. Within this short period the Discovery Basin must have been filled at an average rate of almost 10^5 m^3 yr^{-1}. (p. 31)

Fourth, Rouchy and Saint Martin state:

> According to major biological contributors and despite minor fluctuations, two main intervals of sedimentation separated by a sedimentary gap … may be distinguished. (p. 631)

Fifth,

> Records of the later Neogene history, moreover, are not limited to the Mediterranean. The evidence is extended by drill cores from the bottom of the Black Sea basin. When the Black Sea and Mediterranean basins were separate, influx from the Danube, Dnestr, Sneper, Don, and other central and south European rivers transformed the Black Sea to a freshwater lake. It remained so until the first disiccation of the Mediterranean, when reorganization of the European drainage systems diverted much of the Black Sea tributary water to the Mediterranean, accounting for local eastern Mediterranean sediments with distinctive nonmarine microfossils. (Cloud, p. 441)

Sixth, Birkeland and Larson state: "Not only were the Aral and Caspian seas larger in the recent geological past than they are today, but they were connected with one another as well as with the Black Sea." (p. 420)

The Salinity of the Mediterranean Sea

At the present time the Mediterranean Sea has an average salinity of about 38 parts per million. It varies from west to east – with the western Mediterranean being the lowest. This is to be expected, since water from the Atlantic Ocean is entering the Mediterranean Sea through the Strait of Gibraltar and it has an average salinity level of 35 parts per million.

The following link shows a map of the different levels of salinity of the world: https://brilliantmaps.com/ocean-salinity-map/ You will note from this map that areas near Greenland and Antarctica have lower salinity levels. This is to be expected because of the addition of freshwater (by melting glaciers) to the oceans near them. You will also note that areas near the mouths of large rivers (Amazon, Congo, etc.) have lower salinity levels. This is also to be expected because of the

addition of freshwater to the oceans by these rivers.

Why is the salinity level of the Mediterranean Sea higher than the Atlantic Ocean? *First*, water flows from the Atlantic Ocean into the Mediterranean Sea through the Strait of Gibraltar because of the rate of evaporation of the Mediterranean basin. The rate of evaporation is higher than the river flow into it and the rainfall on it (cf. Cloud, p. 440 – quoted on page 389 above). *Second*, there is no known mechanism to remove the salt/magnesium from the Mediterranean Sea.

The Zanclean Flood

These events are referred to as the Zanclean Flood. This is discussed by Castellanos, et al. The Zanclean Flood is named after a period of time in geology that is part of the Plioscene epoch (dated from about 5.3 million years to 3.6 million years ago by the AAOEC geologic time-scale). Blanc et al. give a summary of this event.

There are several theories on how the Zanclean Flood occurred. Loget et al. claim that regressive fluvial erosion was at the origin of the opening of the Strait of Gibraltar. Others claim that tectonic activities caused the opening of the Strait of Gibraltar. Garcia-Castellanos, et al. claim the water that flowed from the Atlantic into the Mediterranean flowed down a slope, rather than down a water-fall. They also claim that both the Nile and the Rhône cut the under-sea canyons that were discussed in chapter Ten, at this time.

The Fox Flood Model has the ocean rising due to: (1) the fluvial lakes emptying into the oceans, (2) the melting of the glaciers that were deposited during the flood, and (3) the melting of the ice-dams from the glaciers – allowing the lakes to flow into the oceans (e.g. Lake Missouli,[339] Lake Bonneville,[340] Lake Agassiz,[341] Lake Iroquois, etc.). At about the same time (within a few years) freshwater from the Black

[339] https://www.youtube.com/watch?v=cxxLU8ZtMH4
[340] https://www.youtube.com/watch?v=AqJweIoLLKQ
[341] https://www.youtube.com/watch?v=nCBEBIBsJzM

Sea began to flow into the Mediterranean Sea. The Caspian, Aral, and Black Seas were all connected at this time. The melting ice (from the glaciers in eastern Europe) was filling these three seas. This was followed by evaporation of these seas – lowering them. When the ocean levels rose sufficiently to breach the land (isthmus) linking Europe and Africa, the water flowing from the Atlantic Ocean into the Mediterranean Sea cut the Strait of Gibraltar. This raised the level of the Mediterranean Sea to the same level as the Atlantic Ocean (or approximately the same level).

Suggestions for Additional Research

Additional research should be conducted on the possibility that there existed a land bridge (isthmus) across the Strait of Gibraltar after the flood (the flood of Genesis). Research should be conducted on the possibility that this land bridge was breached as the ice caps melted and areas below sea level in parts of what is now the Mediterranean Sea were then flooded. Additional research should consider the possibility that the following events transpired after the flood: (1) the Mediterranean basin was filled with water from the tidal flood at the end of the flood, (2) there was a land bridge (isthmus) across the Strait of Gibraltar preventing water from flowing into the Mediterranean from the Atlantic Ocean, (3) there was a land bridge (isthmus) between Asia and Europe across what is now Turkey blocking the Strait of Bosporus and preventing the Black Sea from emptying into the Mediterranean Sea through the Aegean Sea, (4) the Aral, Caspian, and Black Seas were all connected with their levels being higher than at present, (5) the Mediterranean Sea level began to lower because of evaporation, (6) the water was confined to the lowest levels of the basin, (7) the land bridge across the Strait of Bosporus was breached (after the melting ice raised the levels of the three seas) allowing water (freshwater) to enter the Mediterranean Sea which raised the level of the Mediterranean Sea, (8) after this initial surge of water from the Black Sea the Mediterranean Sea again lowered from evaporation, (9) the lowering of the level of the Mediterranean by evaporation affected the climate of the region by decreasing

the rainfall (perhaps explaining the famines of Gen. 12:10, 26:1, and 41:27), (10) the Strait of Gibraltar were finally breached as the ocean levels were raised by the melting ice caps and lowering of fluvial lakes in the Zanclean flood (Castellanos, et al.), (11) the levels of the oceans were lowered by the transfer of water from the Atlantic to the Mediterranean Sea (This sudden lowering of the sea level would affect some marine life, such as corals), and (12) these changes in the levels of the Mediterranean and the oceans should have been followed by both volcanic and earthquake activity as there were adjustments in isostasy (cf. pp. 175-176). Adjustments in isostasy would cause both volcanoes and earthquakes to occur (cf. the quote of Stokes [p. 176]) from Pascal's Law (cf. p. 178).

AAOEC have a problem with the dating of the filling of the Mediterranean basin. *First*, the level was at least: "110 feet below sea level" (Clottes and Courtin, 1993, p. 64) during the last few thousand years. *Second*, the atheist Cloud states that the Mediterranean basin experienced: "its last refilling about 5.1 MYBP." (p. 439) Birkeland and Larson state: "Six million years ago the Mediterranean was isolated from the Atlantic Ocean. The sea quickly dried up, leaving a desert basin some 3000 m (9840 ft) below sea level." (p. 503) The cave drawings were drawn within the last few thousands of years, not millions of years. The AAOEC time scale is off by three orders of magnitude. If this occurred millions of years ago, the salinity of the Mediterranean Sea should be considerably higher than it is now.

The Fox Flood Model (FFM) explains (hypothesizes) the present salinity level of the Mediterranean Sea quite readily. (1) After the flood (from mostly tidal mechanisms) the Mediterranean basin was filled with water with the average salinity of the oceans, (2) the Mediterranean Sea level was reduced to small areas from evaporation (cf. Anonymous #25, Science News, p. 157 – quoted on page 389 above), (2) the Black, Aral, and Caspian Seas were filled with freshwater by melting glaciers, (3) the freshwater from the Black, Aral, and Caspian Seas flowed into the Mediterranean Sea – partially

filling it with freshwater (cf. Cloud, p. 441 – quoted on page 390 [above]), (4) the amount of freshwater available was reduced as the glaciers melted, (5) the Strait of Gibraltar was breached and the salinity level of the Mediterranean Sea began to increase – it has been increasing since the breach. Rouchy and Saint Martin, p. 631 (quoted on page 389 [above]) have two events – in harmony with number "3" and "5" above. This all fits the time-frame of Wallmann, p. 31 (quoted on page 389 [above]).

Research should also be conducted on the effects of the supposed periodic reversals of the Sun's magnetic field upon the Earth and its' magnetic field. Does this affect organisms that use the Earth's magnetic field for migration etc.?

Research should also be conducted on the effects of the location of the Jovian planets (especially Jupiter) at the various seasons of the Earth. When Jupiter is in superior conjunction[342] it should cause the Earth to be closer to the Sun – raising the Earth's temperature. When the Earth is between Jupiter and the Sun, it should cause the Earth to be farther from the Sun – lowering Earth's temperature. This perturbing of Earth's orbit would have periodic effects on the climate of the Earth – with a period of approximately 12 years.

Additional Predictions from the Fox Flood Model

There should be faulting on the crust of the planet Mercury – assuming that it was the planet that God used to bring about the flood. Fault-lines have been found on Mercury (Pegg, et al.).

There is also a strong likelihood that the core of Mercury also rotates at a different angular velocity than the mantle (just like the Earth).

There is probably geologic evidence – a possible bulge on the side facing Mercury – (on Venus) of the interaction with

[342] The planet lies on the opposite side of the Sun from the Earth.

Mercury. This is likely if Venus were tidally-locked with the Sun prior to the interaction with Mercury.

Optimum Conditions for Life

There should be an optimum barometric pressure, amount of each gas (nitrogen, oxygen, etc.) in the atmosphere, humidity, amount of each nutrient in the soil, and amount of each wavelength of light. These optimum conditions would have been the antediluvian conditions because men lived to be nearly 1,000 years old before the flood (Gen. 5:27, 9:29, etc.). If these conditions could be discovered by scientific research, these would most likely have been the antediluvian conditions. This is precisely what one would expect from the flood model postulated in this treatise (FFM).

Additional research should be done on the trace element content of the quick-frozen animals near the polar regions. If the flood model postulated by this author is correct, these animals should not show any evidence of malnutrition (cf. Tolmachoff, p. 66 – quoted on page 128). In addition, their tissues should contain trace elements and mineral contents that are very near the optimum value for the health of the animal. In addition, some areas were covered with ice before flood waters reached them. If there is evidence that a section of land that is under an ice sheet, such as in Greenland, was never flooded, the soil under the ice sheet should be extremely fertile (near optimum).

This author argues that God created all[343] living things to live in these optimum conditions. It is the contention of this author that God created all living things with genetic variations that enabled them to adapt to changes in these optimum conditions (within certain limits – microevolution to occur). The AAOEC has a problem explaining why living organisms evolved for these optimum conditions. Why did organisms evolve for these

[343] At least most living things. It is possible that some plants were created to become a curse in the postdiluvian world (cf. pp. 58-59). This author has observed that thorny plants tend to grow quite well in poor soils but are choked out by other plants in soil that is well-watered and fertile.

optimum conditions and not for the conditions in which they evolved? For example, if man evolved in the last 10 million years and the oxygen content of the atmosphere during the last 10 million years has been stable at about 21% oxygen with an atmospheric pressure of about 14.7 lbs./in.^{2} at mean sea level (1 atmosphere [101,325 Paschals]), why is a greater oxygen content and barometric pressure healthier for man? Surely natural selection (organic macroevolution – abiogenesis) would have selected those who were better able to survive in these lower conditions!

Additional research should be done to determine if there are geological structures like pingos[344] on Mercury and the Moon.

Additional research should be done to determine if some organisms that are harmful under present atmospheric conditions were beneficial under the antediluvian atmospheric conditions.

Summary of the Things Developed in This Book

The position set forth in the preceding Chapters will answer many of the questions asked by an AAOEC. The following questions have been answered: (1) Why there are earthquakes, floods, storms, and other destructive physical phenomena; (2) why there are volcanoes; (3) the reason for the polar ice caps; (4) why people of Old Testament times could marry their close relatives; (5) the presence of marine life (sea life) fossils in the interior of the continents; (6) the quick-frozen plants and animals near the polar regions entrapped in the ice; (7) the figurative expressions *fountains of the deep* and *windows of heaven*; (8) mountain-building processes (orogenesis) – remember that AAOEC cannot explain orogenesis; (9) the reason for a rise in the levels of the oceans; (10) the reasons for changes in the climate of such areas of the world as Palestine; (11) how submarine canyons were cut (cf. p. 119); (12) the absence of marine sedimentary rock in some areas near the north pole; (13) the longevity of antediluvian

[344] Cf. pp. 158-ff. The AAOEC explanation of pingos might be sound.

mankind; (14) the large size of some antediluvian plants and animals; (15) the exponential drop in the longevity of postdiluvian mankind (cf. Appendix A); (16) the sudden drop in the longevity of postdiluvian mankind; (17) how soot, charcoal, and kerogen were deposited in some sedimentary layers; (18) why the Earth's core rotates faster than the rest of the Earth; (19) why the magnetic and geographic poles of the Earth are not aligned, and (20) why the remanent magnetism in some rocks (lava) shows signs that the magnetic field of the rocks changed directions in a matter of days.

As a sidelight, this position may explain why ancient people worshipped the planetary bodies and thought they had effects upon the lives of people (astrology). The practice of consulting the stars is condemned in the Scriptures (Deut. 4:19, Isa. 47:12-14, Jer. 10:2, and 27:9-10). In addition, it gives a plausible explanation for megalithic architecture, such as the pyramids of Egypt and central America. It is claimed that they took about 200 years to complete. Some postdiluvian king who lived 400 years (in the time of Eber or Peleg [Gen. 11:14-19]) could have completed them.

Some may reply that this author has delved into areas in which the Scriptures are silent. This is true to some extent; some of the conclusions which have been drawn have been arrived at by a correlation of the Holy Writ and the laws and facts of nature (cf. Chapter 3). Many of these same people who object to the position set forth by this author also presume upon the silence of the Scriptures. Some of these claim that the rain was caused by a miracle – without evidence. The Bible does not explicitly say whether or not the flood was caused by a miracle or by providence. The readers should remember that miracles are not the norm; providence is the norm. God normally works through His natural laws to accomplish His desired ends and miracles are the exception rather than the general rule.

Final Remarks

AAOEC frequently chide theists with claims that the AAOEC

model has been "proven by science." This author has repeatedly demonstrated that the AAOEC models are flawed and cannot explain many phenomena. True science (which is based upon empirical evidence) cannot explain most of what we have set forth in this volume because the scientists have not observed these things occurring. Most of their theories about these things are based upon uniformitarian assumptions (linear extrapolation of present processes). The flood model postulated by this author provides a more reasonable explanation of the facts of nature than any of the AAOEC models. This author admits that his flood model might have flaws that are revealed by future evidence that is unearthed (evidence from either the Scriptures or from science).

The following line of reasoning has been followed by this author:

First Premise: If the AAOEC model is true, then the AAOEC model will explain every phenomenon.
Second Premise: The AAOEC model does not explain every phenomenon.
Conclusion: The AAOEC model is not true.

The reader should not interpret this to mean that all AAOEC models have been disproven. Only the model being tested has been disproven. The AAOEC needs to either modify his particular model and "try again" with a new model and/or give honest examination of theistic models.

The following argument is offered to support the basic thesis of this treatise:

First Premise: If Fox's theistic model explains more facts than the AAOEC models, then Fox's theistic model is more reasonable.
Second Premise: Fox's theistic model explains more facts than the AAOEC models. (Demonstrated in this chapter)
Conclusion: Fox's theistic model is more reasonable.

This author has given sound reasons to question the truthfulness of several necessary conditions for atheism to be true. Long periods of time are required for atheism to be true.

Organic macroevolution is required for atheism to be true. Either the eternality of matter is required for atheism to be true or matter created itself. Most of the extrapolation of present processes are based upon uniformitarian assumptions – which have been rejected by most geologists. Long periods of time, organic macroevolution, uniformitarian processes, and eternality of matter are all necessary conditions, but not sufficient conditions, for atheism to be true (cf. p. 15 and Fox, 2024 for a discussion of necessary and sufficient conditions).

The author has attempted to develop a flood model that is in harmony with both the Scriptures, principles of science, and the facts of nature. It is possible that new information from one or more of these three sources will necessitate the modification of this flood model (the FFM). The author is indebted to a number of other men who have blazed a trail in this area (these men have written books that are cited in this book and in the section entitled "References for Additional Study" which is at the end of the treatise).

Conclusion

The Genesis flood brought worldwide destruction of all forms of life. The flood did more to shape the surface of the Earth than any other event since creation. The Christian does not need to fear true science. True science deals with facts that are derived by empirical means (observation [cf. p. 32]); and honest scientists distinguish between facts and theories. True science is always derived from an honest and rational (employing both sound deductive and inductive reasoning) consideration of all the evidence (cf. Appendix E and Fox, 2024, chapter 12 and Appendix V). The Lord revealed that the flood occurred and that it was worldwide in scope.

FACTORS AFFECTING HEALTH

CHAPTER SEVENTEEN

Introduction

In the previous chapters we have considered a number of factors that affect health. We have concentrated upon human health, but the factors that affect human health generally affect the health of animals and even of plants. In this chapter we will consider several other factors that affect our health.

Factors Discussed in Prior Chapters

The evidence is sufficient to believe that the antediluvian atmosphere had a greater oxygen content and a higher barometric pressure. Since certain bacteria (that are presently harmful to human health) might not have gone through the Pasteur point and become anaerobic (in the antediluvian environment), these bacteria might have been either benign or even valuable[345] to humans in the antediluvian world. We also documented (from hyperbaric medicine) how this antediluvian atmospheric condition enhanced our abilities to resist certain bacteria, parasites, fungi, and viruses.

The loss of the water vapor canopy caused more radiocarbon ${}_6C^{14}$ to be produced. The radioactive decay of this carbon isotope (particularly if it were in a DNA molecule) could mutate the organism. Cosmic rays also produce mutations, and the water vapor canopy protected antediluvian men and other organisms from the damaging effects of cosmic rays.

I will hypothesize here regarding the Sun and solar neutrinos. If the Sun began producing light by solar contraction and the heat produced later began to produce heat by nuclear fusion, then there would not be any solar neutrinos until the nuclear fusion began (cf. Chapter 13). Gribbin states: "the Sun is producing fewer neutrinos than standard theories predict."

[345] This is another potential area of future study.

(1994, p. 14) If solar neutrinos affect the decay rates of radioactive isotopes,[346] this would cause all of the radiometric dating techniques to be flawed. In addition, this could adversely affect the health of organisms.

Since tidal waters rotate (amphidromic circulation – due to the Coriolis Effect) and the flood was mostly from tides, the rotating water separated the various minerals into layers rather than the even distribution of the antediluvian soil. The soil of some parts of the earth have more of a given mineral (e.g. copper – e.g. Chile) and some parts have very little of that mineral (e.g. copper – e.g. Australia). The soil that was depleted of this mineral would not have this mineral to supply to the plants growing in it. Most soils (world-wide) are deficient in zinc. It is axiomatic that, if the soil is deficient in any given mineral, the plants growing in that soil will be deficient in that mineral. It is also axiomatic that animals (and humans) consuming the plants grown in this mineral-deficient soil will also be deficient in that mineral. The mineral content of the soil in different parts of the world affects how plants grow. Chemists refer to the pH[347] of an aqueous solution as the ability of that soil to react chemically. Farmers should adjust their fertilizer to the soil – not just any old fertilizer works!

The antediluvian world was watered by a heavy dew – there was no rain. This means that the erosion of the soil was extremely limited. Since many minerals are water-soluble, the rain that came after the flood leached these water-soluble minerals deeper into the soil. This continues to reduce the fertility of the soil.

Lightning discharges produce several radicals that change chemicals into other chemicals. Lightning produces hydroxyl (OH) and hydroperoxyl (HO_2) that oxidize other chemicals.

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[346] This question is presently being debated by physicists (cf. Sturrock, et al.). https://physicsworld.com/a/do-solar-neutrinos-affect-nuclear-decay-on-earth/

[347] pH means "potential of hydrogen" or it is sometimes called "power of hydrogen." Pure water H_2O has a pH of 7. A solution with a pH less than 7, is an acid. A solution with a pH greater than 7 is a base (alkaline).

Jenkins et al. discuss these effects that are even caused by electrical discharges (both during and after thunderstorms) from the leaves of plants. Of course, lightning produces Ozone (O_3) in the upper-atmosphere. Tropospheric ozone adversely affects the health of both humans and animals. In addition, it also adversely affects the health of plants.

Diseases Related to Mutations

There are many diseases that are linked with mutations. As one would expect some of these mutations are race-specific. For example, sickle-cell anemia is mostly found in those of African heritage. Cystic fibrosis is largely limited to Caucasians and is the most common hereditary disease for Caucasians. Here is a link to a website that lists several common hereditary diseases: https://www.genome.gov/For-Patients-and-Families/Genetic-Disorders

Genetic diseases are usually listed in four categories: (1) single gene inheritance, (2) multifactorial inheritance, (3) chromosome abnormalities, and (4) mitochondrial (mitochondrial DNA comes from the mother) inheritance. Here is a link that discusses these four categories: https://www.medicinenet.com/genetic_disease/article.htm

Diseases Related to Our Lifestyles

Some diseases are sexually-transmitted. These are sometimes referred to as STDs (sexually-transmitted diseases) or STIs (sexually-transmitted infections). There are many well-documented STDs, we will consider a few of them here.

Gonorrhea is linked with several health problems: PID (pelvic inflammatory disease) and infertility can be caused by gonorrhea.

Chlamydia is linked with several health problems: PID (pelvic inflammatory disease), ectopic pregnancies, reactive arthritis, a higher rate of ovarian cancer, and infertility in women can be caused by chlamydia. In men it may cause epididymitis and

prostatitis. Children born to an infected mother are very likely to be infected.

Syphilis has been linked with several health problems: it may possibly damage the internal organs (heart, neurological system, etc.) and can lead to death. It can be passed on to a child, if the mother is infected.

AIDS is linked with several health problems: it lowers a person's ability to fight all kinds of diseases (cancer, pneumonia, etc.).

Human Papillomavirus (HPV) is linked with several health problems: It is linked with a wide range of cancers such as: cervical, anus, penal, vagina, vulva, and oropharynx (Wakeham, K.; Kavanagh, K.), (Giuliano AR, et. al), and (Hariri, S. et al.).

Genital herpes is linked with several health problems: meningoencephalitis, encephalitis, inflammation of the lower spinal cord and surrounding nerves, neonatal herpes – a serious illness that can be fatal, and many other medical conditions.

Tricomoniasis (caused by a parasite) is linked with several health problems: pelvic inflammatory disease (PID), premature delivery, low birth weight, increased risk of cervical and prostate cancer, and many other medical conditions.

Hepititis B is linked with several health problems: liver damage and several other medical conditions. It can lead to death in severe cases.

A number of health-related problems are linked with alcohol usage, illegal drugs, etc. Fetal alcohol syndrome, crack-babies, etc. are effects upon the children of alcohol/drug abusers. Some children suffer – either through physical consequences or through moral consequences – for their parents' sins (Ex. 20:5, 34:7, and Deut. 5:9).

The Human Body and Microevolution

God created our bodies with the innate ability to adapt (by microevolution)[348] to various environments. For example, dark-skinned people are protected from harmful ultraviolet light by the melanin pigment in their skin. This enables them to survive better than light-skinned people in regions of the Earth that have more sunlight. However, the larger amounts of melanin reduces the amount of vitamin D_3 that their skin produces. Severe vitamin D_3 deficiency may produce diseases called *rickets* and *osteoporosis*. Vitamin D_3 is a hormone – sometimes called a prohormone – produced by the body. Our skin produces 7-dehydrocholesterol which reacts with cholesterol to produce vitamin D_3 when the skin is exposed to sunlight (UVB). Dark-skinned people who live in the latitudes far-removed from the equator are more prone to vitamin D_3 deficiency than light-skinned people. Light-skinned people who live in latitudes near the equator have a higher risk of contracting skin cancer than dark-skinned people. Light-skinned people who live in latitudes far-removed from the equator generally do not experience vitamin D_3 deficiencies as readily as dark-skinned people. Our immune systems require vitamin D_3 to operate efficiently. Vitamin D_3 is essential for the body to absorb calcium and magnesium. Gloth claims that vitamin D_3 helps with arthritis.

People with Rh factor negative blood are resistant to chikungunya fever (Sudarsanareddy et al). This enables Rh negative blood types to survive better than Rh positive blood types in places where chikungunya fever is prominent.

The ABO gene that is present in type A, B, and AB blood, but not in type O blood is linked with several health factors (Penn Medicine).

People with type O blood are more resistant to malaria (Rowe). On the other hand, people with type O blood are more susceptible to cholera (Harris, et al.).

[348] Do not confuse microevolution with macroevolution.

The Inuit population of Greenland have at least two genetic adaptations to the severe climate of Greenland. *First*, they are able to thrive on a diet high in omega-3 oil – from sea food. *Second*, they are able to convert brown fat into body heat (Fumagalli, Matteo; et al.)

Sherpas share genetic traits with some Tibetans that enable them to survive in hypoxic conditions – high-altitude adaptation (Bandari, Sushil; et al.).

DISEASES RELATED TO NUTRITIONAL DEFICIENCIES

Diseases Related to Vitamin and Antioxidant Deficiencies

We begin here by using the vague word *deficiency*. Obviously, there are degrees of deficiencies. In order to be more precise, we usually limit the word *deficiency* by the adjectives (1) minor, (2) moderate, and (3) severe. We get into a vicious circle here because there are degrees of minor, moderate, and severe deficiencies. When I make comments about deficiencies, I am not usually referring to minor deficiencies.

Minor deficiencies of vitamins, minerals, etc. usually have minor effects upon human health. Even these minor effects establish one of the hypotheses of this volume – there is an optimum value of each vitamin, mineral, etc. for human health.

Retinol (vitamin A) is essential for the health of the skin, for fighting infections, and for many other problems. Night blindness has been linked with vitamin A deficiency. Vitamin A helps the body to heal tissue (wounds, surgery, etc. [Mazzotta]). Beta-carotene is helpful for health problems such as fighting cancer (Stahelin). The man-made (synthetic) beta-carotene is not effective (Yeum).

The anti-oxidants lutein and zeaxanthin are claimed to be preventive measures to reduce the risk of cataracts (Jacques, et al.) and macular degeneration (Watson, et al.).

The anti-oxidant lycopene, which is derived from fruits and vegetables (that are red) such as tomatoes and watermelons may be helpful for heart health (Snodderly), cancer prevention (Levy), and for vision (Medical Tribune). Lycopene is one of a few vitamins that has its potency increased by cooking it – most vitamins and/or anti-oxidants have their potency lowered by cooking.

Severe vitamin B-1 (thiamine) deficiency has been linked with the disease beriberi. Alcoholics have a thiamine deficiency. Harrell claims thiamin also helps with our memories.

Vitamin B-3 (niacin) has been used to treat high cholesterol levels (O' Keefe) and (Martin-Jadraque).

Folic acid deficiency can lead to several health problems such as spina bifida and anencephaly in newborns (Super) as well as other health problems.

Vitamin B-12 (cobalamin) affects a wide range of the functions of our bodies. For many years it has been used (by physicians) to treat pernicious anemia.

It is widely known that a deficiency in vitamin C causes scurvy, but it is beneficial for other health matters. Therefore, vitamin C is both preventative (prophylactic) and therapeutic.

Diseases Related to Mineral Deficiencies

Our bodies need a wide range of minerals to be healthy: boron, calcium, chromium, cobalt (in vitamin B-12 [cobalamin]), copper, iodine, iron, magnesium, manganese, molybdenum, potassium, selenium, vanadium, zinc, etc.

Boron may have a positive effect on arthritis (Travers, pp. 127-132) and may be effective in preventing osteoporosis (Hunt). Boron deficiencies have been linked with kidney stones (Hunt). Travers claimed that boron improved arthritis symptoms (pp. 237-232). Penland claims boron deficiencies

adversely affect our ability to concentrate. The effects of boron deficiencies upon trees was known quite some time ago – 1950 (Woodbridge).

Chromium is another mineral that is essential to our health. Chromium may improve glycemic control for type-2 diabetics (Anderson). Lefavi linked chromium to heart-health.

Copper is required by our bodies to utilize iron, for nerve function, for bone growth, and for glycemic control. Copper deficiency may contribute to anemia and osteoporosis. Olivares claims that it is useful in treating rheumatoid arthritis. Medieros claims that copper is useful in treating a nutritional form of cardiomyopathy. Conlon claims that copper is essential for bone health. There is an optimum value for health and Gahlot claims that excessive copper can damage the eyes – macular degeneration. **Any copper supplementation should be supervised by a physician.** Atkins claims that copper sebacate is the best form of copper for supplementation (pp. 137-140).

When I was in elementary school, we were taught that a lack of proper amounts of iodine would lead to goiters. This is a well-known fact. Iodine is preventative – prophylactic – (for goiters), but it is not therapeutic (it will not cure the goiter, it will only prevent it). Insufficient iodine will cause birth-defects – cretinism (Xue-Yi). Insufficient iodine may be linked with learning difficulties (Tomlinson). Ghent claims that iodine is both preventative and therapeutic for fibrocystic breasts, endometriosis, and uterine fibroids. Iodine is used to treat radiation exposure. Iodine is found in seaweed (kelp) and seafood. However, there is no iodine in freshwater fish (catfish, bass, perch, etc.). Excessive iodine is toxic.

I will digress for a bit here. I watched a program on TV where a physician advised people to stop eating iodized salt because he said: "We get enough iodine from seafood." This physician was from the east-coast of the United States and his advice was not good. It was possibly good advice for people who eat a generous amount of seafood, but not for other people. The

present fad (in the United States) to eat sea-salt (sea-salt has several minerals in it but it does not have iodine in it) will almost certainly have bad consequences.

I was told by a relative that a dietitian told them that we get enough iodine from our food because salt is added to our food by most food-processors. This is only sound advice if the food-processors use iodized salt. Since iodine is not normally found in salt, it requires the added expense of purchasing iodine to add to the salt. I strongly suspect that the food-processing companies do not spend this extra money. Therefore, it is most likely that the salt that the food-processors add to food is not iodized salt. Ohlhorst et al. discuss this problem. I checked the ingredients label on several cans of food – several had sea salt, others had salt, but none of them had iodine. The label on iodized salt had potassium-iodide as an ingredient. If we do not get enough iodine in our diets because we follow bad advice, the introduction of iodine will not be therapeutic with regards to our thyroid gland's health. Iodine is prophylactic in preventing goiters, but it is not therapeutic once one gets a goiter.

Iron is essential for our bodies to be healthy. Vreugdenhil claims there is a linkage between iron deficiency and rheumatoid arthritis. Almost everyone is aware that iron deficiency may cause anemia. Too much iron may be detrimental to a person's health. This means that there is an optimum amount of iron for us to be healthy.

Magnesium is another essential mineral for humans to have healthy bodies. Our muscles require calcium to contract and magnesium to relax. From this it is axiomatic that our hearts require both calcium and magnesium to beat. Smetena claims that most heart patients need magnesium. Keller and Aroson claim magnesium helps to stabilize irregular heartbeats. Sanjuliani claims that magnesium reduces high blood pressure. Seelig claims that it increases the volume of blood pumped for a given value of oxygen. Rarn claims it reduces the probability of blood clots forming. Rabbani claims it raises HDL cholesterol and lowers LDL cholesterol. Mauskop claims

people who have migraines have a low level of magnesium in their blood. Abraham claims it is essential for the health of our bones. Magnesium is important for other reasons.

Manganese is another essential element for health. It helps to break down fats, carbohydrates, and proteins. Manganese is essential for the body to handle blood glucose (Rubenstein). Manganese helps to protect the body from "free radicals" (Zidenberg-Cherr). Manganese is essential for our bodies to be healthy. As with some other minerals, excess manganese is unhealthy.

Wright claims that molybdenum tends to cleanse the body of toxins. Wright also claims molybdenum helps to relieve asthma. Slot claims molybdenum helps to overcome seizures in newborns. Nakadaira claims molybdenum lowers the risk of gastrointestinal cancer.

Potassium is also an essential mineral for human health. It is essential for regulating nerve impulses, muscle contractions, and heart rhythm. Some prescription drugs (diuretics) may deplete the potassium in the human body. This gives a condition called *hypokalemia* – which should be monitored by a physician. Most people get enough potassium from their diets – unless they are taking drugs that deplete it. Some prescription drugs may elevate potassium levels in the human body.

Selenium is another essential element for healthy bodies. Clark claims there is evidence that selenium is therapeutic for several ailments. There appears to be evidence that selenium prevents viruses from mutating (Nature Medicine). Zhigneiw, et al. claim lymphoma is more common among people with low selenium levels. Clark claims selenium is both prophylactic and therapeutic for cancer. Suadicani claims low levels of selenium were associated with heart disease. Berry claims selenium is essential for thyroid health. Mai claims multiple sclerosis patients have low selenium levels. Toxic metals (lead, mercury, platinum, cadmium, etc.) appear to be causal factors in a number of health problems and Hu claims selenium bonds

with these metals and keeps them from harming. Guvenc claims selenium is critical to preventing neural tube defects in infants. Fitzherbert claims babies who die of sudden infant death syndrome (SIDS) have selenium deficiencies. Excess selenium is toxic; therefore, there is an optimum value for human health.

Seaborn claims silicon is essential to the development of several parts of the human body. Calomme claims silicon helps in the development of cartilage. Nielsen claims silicon helps in the development of bones. Of course we get organic silicon in root vegetables (beets, turnips, radishes, etc.).

Brichard claims vanadium is therapeutic for insulin-related problems. Vanadium has not been studied sufficiently to declare it to be an essential mineral; however, I suspect that it is essential – since it appears to be therapeutic.

Zinc is also an essential element for our health. It is necessary for the immune system, bodily metabolism, wound healing, and our senses of both smell and taste. Godfrey claims zinc helps to fight viruses of many different forms. Both Melichar and Harden claim zinc helps fight cancer. There are a wide range of health problems that are related to zinc deficiencies. Zinc is toxic, if one ingests excessive amounts of it. Therefore, there is an optimum value of zinc for our health.

Some of these minerals and vitamins are preventative (prophylactic), some help to cure ailments (are therapeutic), and some are both preventative (prophylactic) and therapeutic.

Warning: Some people may reason that if a little bit of something (iodine, iron, copper, zinc, selenium, etc.) is good, then a lot will be better. Note that excesses of certain minerals etc. can be dangerous!

Minerals that are Toxic

As I have already pointed out, some minerals (iron, copper,

selenium, iodine, zinc, etc.) are essential and prophylactic in the proper amounts, but they become toxic in excessive amounts. Some of these minerals have two basic chemical forms: (1) Organic and (2) inorganic. Two forms of iron exist (1) heme iron – this form is natural (organic) and we can overdose on it – (2) non-heme iron – this is a non-organic form and we can overdose on this form (Sweeten, pp. 263-275). The iron that is added to food in the USA is non-heme iron. The addition of non-heme iron to flour is linked with liver cancer (Geriatric Consultant, p. 6). Flour – and other foods (cereals etc.) are fortified with non-heme iron. The heme iron was milled out of the wheat, rice, etc. as part of the bran.[349] God created our bodies to assimilate the organic forms of these minerals because in the antediluvian world, the proper amounts of the mineral were available through what they ate.

It is widely known that lead is toxic. It is thought that the Romans suffered from lead-poisoning (they used pewter cooking utensils). In the United States we stopped using lead in our paints and in gasoline because it was poisoning people. Lead paint was banned in the United States in 1978.

Aluminum and Human Health

No known organisms use aluminum for their organic processes (Reinke). Aluminum is abundant in the Earth's crust (about 8%). The abundance in the upper part of the antediluvian Earth's crust is unknown (it was probably different than the present value). As with other minerals, the various soils contain varying amounts of aluminum. The following table illustrates why aluminum is a problem:

Table 9

Mineral	Atomic size	Electric charge
Aluminum	0.051 nm	3^+
Iron	0.064 nm	3^+
Calcium	0.099 nm	2^+
Magnesium	0.066 nm	2^+

[349] Cf. a more thorough discussion of this on page 411.

Because of the atomic size and electric charge of aluminum, it can act as a competitive inhibitor of an organism's absorption of the essential minerals: iron, calcium, and magnesium. Our kidneys normally excrete excess aluminum. Clearly, persons with less than normal kidney functions might have an excess of aluminum in their bodies. Aluminum toxicity may cause anemia, bone pain, decreased bone density, etc.

There are a number of scientists that claim that aluminum is linked to both Alzheimer's disease, ALS,[350] and autism. Because correlation does not prove that there is a cause-and-effect relationship, the fact that people with these diseases tend to have higher amounts of aluminum in their bodies does not prove that the aluminum caused these diseases. Correlation is a necessary condition for a cause-and-effect relationship, but it is not a sufficient condition for a cause-and-effect relationship. Their basic reasoning contains the logical fallacy of *affirming the consequent*. Here is their argument:

> First Premise: If aluminum is a causal factor in certain diseases, then excess aluminum will be present in the bodies of those with certain diseases.
> Second Premise: Excess aluminum is present in the bodies of those with certain diseases.
> Conclusion: Aluminum is a causal factor in certain diseases.

Krewski et al.[351] found that high concentrations of aluminum found in the blood stream are associated with softening of the bones and encephalitis. In addition, they also found that aluminum "distributes" across the placenta to the fetus, into breast milk and hair, as well as all other "tissues and fluids" including the brain.

Aluminum is in some cosmetics, deodorants, some prepared foods, antacids (aluminum inhibits the production of acid in our stomachs), and many certain vaccines. Many vaccines

[350] Amyotrophic lateral sclerosis (ALS), sometimes called Lou Gehrig's disease.
[351] Krewski cites a number of other studies.

contain aluminum as an adjuvant.[352] The fact that aluminum heightens the body's immune response means that the body is having a negative reaction to the aluminum. I suspect that this aluminum being used as an adjuvant, is dangerous – it seems likely that it causes health problems. Reinke discusses some problems with using aluminum as an adjuvant.

Since the kidneys excrete aluminum, any person with kidney functions that are less than a normal adult would tend to be adversely affected by increased aluminum in the bloodstream. Both infants and the elders are two groups whose kidneys tend to not function like a normal adult's kidneys. This might explain the apparent increase in both Alzheimer's disease and autism. This gives credence to the claims that some children developed autism after vaccinations – if aluminum was used as an adjuvant in the vaccine.

I know that aluminum oxide (Al_2O_3) is an insulator and if aluminum contaminates the dendrites in the brain, it seems to me that it might be the cause of Alzheimer's disease and/or autism. Since dendrites are involved in cell-to-cell communication, it seems that is might be the cause of these diseases – if it has aluminum. Unfortunately, none of my college majors required me to take organic chemistry.

NUTRITIONAL PROBLEMS WITH FOOD PREPARATION

Most fruits are picked before the fruit ripens and then treated with sulfites and other chemicals to give the fruit the appearance of being ripe. However, the fruit does not have full nutritional value when it is not harvested when it is ripe.

Many fruits and vegetables are sliced and diced and cooked and frozen (all of which may reduce the nutritional availability). Then many of our fruits and vegetables are overcooked – destroying some of the nutrients. Tomatoes are an exception to this rule.

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[352] An adjuvant is a substance that helps increase the body's immune response to the vaccine.

Most grains (wheat, rice, barley, etc.) are refined (the outer part of the grain [bran] is milled off the grain). This *bran* is fed to livestock because it is very nutritious (cf. Copi – below). The remaining "white flour" or "white rice" is then *enriched* – some (but not all) of the minerals and vitamins that were milled off the grain are put back into the *enriched flour*.

Atkins – a cardiologist – wrote (p. 224):

> The devastating effects of these refined carbohydrates first began to materialize in 1920,[353] when a new word entered medical lexicons – "myocardial infarction," the scientific term for heart attacks. Hard as it may be to believe, heart attacks were unknown before the twentieth century (the first description of a heart attack in a medical journal appeared in 1912), and we have the food refiners to thank for its appearance.

Refined carbohydrates not only removed many of the nutrients, but refining also removed fiber from the foods.

The effects of milling off the coating of rice were known as early as 1935. Copi (p. 416) quotes Jaffe:

> Eijkman fed a group of chickens exclusively on white rice. They all developed polyneuritis and died. He fed another group of fowl unpolished rice. Not a single one of them contracted the disease. Then he gathered up the polishings from rice and fed them to other polyneuritic chickens, and in a short time the birds recovered. He had accurately traced the cause of polyneuritis to a faulty diet. For the first time in history, he had produced a food deficiency disease experimentally, and had actually cured it. It was a fine piece of work and resulted in some immediate remedial measures. (Bernard Jaffe, Outposts of Science) – Here the polishings (bran) were both prophylactic and therapeutic (MRF).

Many fats are *hydrogenated* to give them a longer shelf-life. Kummorow claims hydrogenation interferes with the metabolism of the good fats – omega-3 and omega-6.

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[353] According to Merriam-Webster the term myocardial infarction first appeared in 1927. Atkins probably used a rounded number here.

Of course, refined sugar is also devastating to health as are some food-preservatives. We might also find that GMO's (genetically-modified organisms) might be detrimental to our health – I suspect that they are detrimental to our health.

DISEASES RELATED TO PARASITES

Alzheimer's may also be related to a cat parasite: https://meridian.allenpress.com/journal-of-parasitology/pages/cat-parasite-linked-to-likelihood-of-alzheimers-disease
Remember, a correlation does not necessarily prove that there is a cause-and-effect relationship.

Malaria is caused by the parasite that is usually transmitted by a mosquito bite: https://www.mmv.org/malaria/about-malaria/lifecycle-malaria-parasite

Other diseases are related to various parasites. Here is a link to a list of a number of parasitic diseases in humans: https://www.cdc.gov/parasites/az/index.html

QUESTIONS ABOUT ORGANIC MACROEVOLUTION

In this chapter we have established that there are optimum values of a number of vitamins and minerals that are required for organisms to be healthy. We are taught (in our public-school systems) that all organisms evolved by macroevolution (adapted) to the conditions that existed (cf. Appendix D and Fox, 2024, Appendix P).

One wonders why all of the organisms evolved to optimum conditions under which they never lived. Why did they not evolve to the conditions existing when they were evolving?

CONCLUDING REMARKS

We hear people say that we ought to eat a balanced diet, and this is all we need to do. I would agree with this if the

conditions under which our foods were grown were those of the antediluvian world. The food is only healthy without supplements, if the soil in which those foods were grown has all the minerals that it needs. It is axiomatic that, if a mineral is not in the soil (or there is not a sufficient amount of the mineral in the soil), it cannot be (or is not likely to be) in the plant that is growing in the soil.

What about the fact that some people have genetic predispositions for some diseases? Should they just give up and accept the inevitability that they will get the disease? Why not give the body what it needs to function properly (a proper diet, exercise, do not abuse the body, etc.) and to either reduce the chances of getting the disease or diminish the effects of the disease? For example, people with hemochromatosis (some forms are genetic) can be careful about consuming excessive amounts of iron.

This chapter demonstrates some reasons why the longevity of mankind has decreased in postdiluvian times. The food grown in antediluvian times was from soil with optimum fertility and did not require any supplementation. Since postdiluvian soil does not contain the proper amounts of the various minerals/elements, food grown in the postdiluvian soil may require supplementation for human health.

I have cited various sources for claims about the effects of the various minerals/elements, vitamins, and anti-oxidants. In some instances, I have used the weaker term (may) instead of the stronger term (will) used by the author of the reference being cited. I did this because I recognize the tentative nature of scientific conclusions.

THE SCIENTIFIC METHOD APPLIED TO FOX'S FLOOD MODEL

CHAPTER EIGHTEEN

Introduction

The Scientific Method has already been discussed in this volume, and it is thoroughly discussed in Fox, 2024, Chapter 12 and Appendix Q). I suggest that you study my discussion in Fox 2024 along with this chapter.

This treatise has been written to give an explanation of the flood account from Genesis 6-9. The logician Copi wrote:

> An explanation is a group of statements or a story from which the thing to be explained can logically be inferred and whose assumption removes or diminishes its problematic or puzzling character. Of course the inference of the fact as conclusion from the explanation as premise might have to be enthymematic, where the "understood" additional premisses may be generally accepted causal laws, or the conclusion may follow with probability rather than deductively. … The chief criterion for evaluating explanation is *relevance*. … The relevance of a proposed explanation, then, corresponds exactly to the cogency of the argument by which the fact to be explained is inferred from the proposed explanation. … The most obvious requirement to propose is that the explanation be *true*. (Copi, pp. 461-462)

Copi also wrote:

> Science is supposed to be concerned with facts, and yet in its further reaches we find it apparently committed to highly speculative notions far removed from the possibility of direct experience. (Copi, p. 463)

These "speculative notions" are not true science, until they are shown to be probably true by the scientific method (by empirical means – by direct experience).

> Every explanation in science is put forward tentatively and provisionally. Any proposed explanation is regarded as a

mere hypothesis, more or less probable on the basis of the available facts or relevant evidence. It must be admitted that the scientist's vocabulary is a little misleading on this point. When what was first suggested as a "hypothesis" becomes well confirmed, it is frequently elevated to position of a "theory." And when, on the basis of a great mass of evidence, it achieves well-nigh universal acceptance, it is promoted to the lofty status of a "law." … The vocabulary of "hypothesis," "theory," and "law" is unfortunate, since it obscures the important fact that *all* of the general propositions of science are regarded as hypotheses, never as dogmas. … Since every scientific explanation is regarded as a hypothesis, it is regarded as worthy of acceptance only to the extent that there is evidence for it. As a hypothesis, the question of its truth or falsehood is open, and there is continual search for more and more evidence to decide that question. The term "evidence" as used here refers ultimately to experience; sensible evidence is the ultimate court of appeal in verifying scientific propositions. Science is empirical in holding that sense experience is the test of truth for all its pronouncements. Consequently, it is of the essence of a scientific proposition that it be capable of being tested by observation.

Some propositions can be tested directly. … But the propositions which scientists usually offer as explanatory hypotheses are not of this type. … They can, however, be tested indirectly.

The pattern of indirect testing or indirect verification consists of two parts. First one deduces from the proposition to be tested one or more other propositions which are capable of being tested directly. Then these conclusions are tested and found to be either true or false. If the conclusions are false, any proposition which implies them must be false also. On the other hand, if the conclusions are true, that provides evidence for the truth of the proposition being tested, which is thus confirmed indirectly.

> It should be noted that indirect testing is never demonstrative or certain. To deduce directly testable conclusions from a proposition usually requires additional premises.
>
> Similarly, establishing the truth of a conclusion does not demonstrate the truth of the premisses from which it was deduced. We know very well that a valid argument may have a true conclusion even though its premises are not all true. … So the inferred conclusion might be true even though the premisses from which it was deduced were not. In the usual case, though, that is highly unlikely; so a successful or affirmative direct testing of a conclusion serves to corroborate the premisses from which it was declared.
>
> It must be admitted that every proposition, scientific or unscientific, which is a relevant explanation for an observable fact, has *some* evidence in its favor, namely the fact to which it is relevant. … Here, then, is *the* difference between scientific and unscientific explanations. A scientific explanation for a given fact will have directly testable propositions deducible from it, other than the one asserting the fact to be explained. But an unscientific explanation will have no other directly testable propositions deducible from it. It is of the essence of a scientific proposition to be empirically verifiable. (Copi, pp. 463-466)

Evaluating Scientific Explanations

Since this treatise has set forth a theistic explanation for many of the geologic formations on the Earth, it is imperative that we determine how we can properly evaluate scientific evidence. Is there scientific evidence that supports the theistic Fox Flood Model?

> The question naturally arises as to how scientific explanations are to be evaluated, that is, judged as good or bad, or at least as better or worse. This question is especially important because there is usually more than a

> single scientific explanation for one and the same fact. …
>
> No one has ever pretended to lay down a set of rules for the invention or discovery of hypotheses. It is likely that none could ever be laid down, for that is the *creative* side of the scientific enterprise. Ability to create is a function of imagination and talent and cannot be reduced to a mechanical process. … There is no formula for discovering new hypotheses, but there are certain rules to which acceptable hypotheses can be expected to conform. These can be regarded as the criteria for evaluating hypotheses.
>
> There are five criteria commonly used in judging the worth or acceptability of hypotheses. They may be listed as (1) relevance, (2) testability, (3) compatibility with previously well-established hypotheses, (4) predictive or explanatory power, and (5) simplicity. (Copi, p. 467)

By relevance, Copi means that it must be deducible from the hypothesis. By testable Copi means that it must be possible to test the hypothesis by empirical means (some observable fact can be logically deduced from it). Regarding compatibility with previously well-established hypotheses, Copi wrote:

> Although the ideal of science may be the gradual growth of theoretical knowledge by the addition of one new hypothesis after another, the actual history of scientific progress has not always followed that pattern. Many of the most important new hypotheses have been inconsistent with older theories and have in fact replaced them rather than fitted in with them. (p. 469)

Regarding predictive or explanatory power, Copi wrote:

> If one of two testable hypotheses has a greater number of observable facts deducible from it than from the other, then it is said to have greater predictive or explanatory power. … An observable fact that can be deduced from a given hypothesis is said to be explained by it and also can be said to be *predicted* by it. …
>
> Our fourth criterion has a negative side which is of crucial importance. If a hypothesis is inconsistent with any well-

attested fact of observation, the hypothesis is false and must be rejected. (p. 470)

The fourth criterion is basically a *modus tollens* argument. A *modus tollens* argument is a valid argument of the form:

First Premise: If S is true, then N is true.
Second Premise: N is not true.
Conclusion: Therefore, S is not true.

The antecedent of this hypothetical (conditional) syllogism is "S" (a sufficient condition) and the consequent is "N" (a necessary condition).

> Each of these equivalent sentences claims that the antecedent expresses a *sufficient* condition for the consequent … and claims that the consequent expresses a *necessary* condition for the antecedent … (Barker, p. 97)

Barker explains both necessary and sufficient conditions:

> By saying that B is a *necessary* condition for C, we mean that nothing is a case of C without being a case of B. By saying that B is a *sufficient* condition for C, we mean that anything that is a case of B is a case of C. For example, being at least thirty years old is a necessary but not a sufficient condition for being a United States senator. (Barker, p. 70)[354]

Hurley discusses necessary and sufficient conditions:

> Conditional statements are especially important in logic because they express the relationship between necessary and sufficient conditions. *A* is said to be a sufficient condition for *B* whenever the occurrence of *A* is all that is needed for the occurrence of *B*. For example, being a drake is a sufficient condition for being a male. On the other hand, *B* is said to be a necessary condition for *A* whenever *A* cannot occur without the occurrence of *B*. Thus, being a male is a necessary condition for being a drake. (P. Hurley, p. 20)
>
> Event *A* is said to be a **sufficient condition** for event *B*

[354] I have used the letter N for the necessary condition where Barker used the letter B and the letter S for the sufficient condition where Barker used the letter C. I did this in Fox, 2024 – except in quotes.

> whenever the occurrence of *A* is all that is required for the occurrence of *B*. On the other hand, event *A* is said to be a **necessary condition** for event *B* whenever *B* cannot occur without the occurrence of *A*. … To translate statements involving sufficient and necessary conditions into symbolic form, place the statement that names the sufficient condition in the antecedent of the conditional and the statement that names the necessary condition in the consequent. (P. Hurley, p. 286)

The scientific method employs the following *modus tollens* argument:

> First Premise: If the hypothesis (the sufficient condition) is true, then the observable consequence (the necessary condition) must be true.
> Second Premise: The observable consequence (the necessary condition) is not true.
> Conclusion: The hypothesis (the sufficient condition) is not true.

The scientific method repeatedly attempts to disprove the hypothesis by a series of tests (by empirical methods). Cf. Fox, 2024, Chapter 12 and Appendix Q.

We cannot "affirm the consequent" (the observable consequence) and prove the antecedent (the hypothesis) to be true. This is an invalid argument – all invalid arguments are unsound. *Affirming the consequent* is a logical fallacy. This is why the scientific method employs a *modus tollens* argument. The **unsound** form would be:

> First Premise: If the hypothesis (the sufficient condition) is true, then the observable consequence (the necessary condition) must be true.
> Second Premise: The observable consequence (the necessary condition) is true.
> Conclusion: The hypothesis (the sufficient condition) is true.

It is axiomatic that the scientist would have to both know every *observable consequence* that was implied by his hypothesis and test (by either observing it in nature or

arrange a laboratory situation to test it) every *observable consequence* in order to be certain of his hypothesis. This is why Copi (pp. 464-465) wrote:

> Since every scientific explanation is regarded as a hypothesis, it is regarded as worthy of acceptance only to the extent that there is evidence for it. As a hypothesis, the question of its truth or falsehood is open, and there is continual search for more and more evidence to decide that question.

Lee was correct when he wrote:

> Because all scientific statements must be considered at best only tentatively correct, the phrase "'scientific proof" should be used with extreme caution in scientific discussions. Strictly speaking, nothing in science is truly proved. (p. 19)

Copi's fifth criteria is simplicity.

> The criterion of simplicity is a perfectly natural one to invoke. In ordinary life as well as in science, the simplest theory which fits all the available facts is the one we tend to accept. … Simplicity, however, is a very difficult term to define. … The fifth and last criterion, simplicity, is an important and frequently decisive one, but it is vague and not always easy to apply. (pp. 471-472)

Geology is Based Upon Historical Evidence

One's knowledge of history is based upon knowledge not gained by empirical means.

> The past can be reached in only two ways: either (1) through the personal memory of the historian, … or (2) through the interpretation of objects as remains of past events. (Cohen and Nagel, pp. 323-351)

The purpose of historical research is: "To reconstruct the past objectively and accurately, often in relation to the tenability of a hypothesis." (Isaac and Michael, pp. 41-45) This is the same method of determining truth used in a courtroom. This is referred to as *prima facie* evidence[355] or knowledge.

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[355] "… legally sufficient to establish a fact or a case unless disproved …" (Merriam-Webster)

Any area of science that deals with things that cannot be either reproduced in the laboratory or observed in nature is based upon statistical inference. Even conclusions derived from things that are or can be observed are based upon statistical inference. Raup says: "… that geology and paleontology are historical sciences … and that these sciences rely largely on statistical inference." (March 1983, p. 20) Both geologists and paleontologists must look at the artifacts and then form a hypothesis to explain them. Geologists and paleontologists will likely be biased by their worldview (either theistic, atheistic, or agnostic). One's worldview will affect how he will view the evidence. In many instances the evidence could lead him to more than one conclusion.

When geologists observe present-day processes and either extrapolate them back in time or interpolate between events, they are making uniformitarian assumptions. Remember, that most present-day geologists have rejected uniformitarian principles.

The Scientific Method Applied to Fox's Flood Model

If the Fox Flood Model is sound, there should be a number of phenomena that should be evident both in geology and in astronomy. We will test the hypothesis that the Fox Flood Model is sound in this section.

First Premise: If the Fox Flood Model (FFM) is sound, then X should have occurred.
Second Premise: The Fox Flood Model (FFM) is sound.
Conclusion: X should have occurred.

In this argument, "X" will be an observable consequence. In this instance, the expression "observable consequence" will refer to both historically observable (through fossils, sedimentary rocks, craters, etc.) and through present day evidence. Because proving the consequent does not prove the antecedent to be true – it is the logical fallacy of *affirming the consequent*, we must frame this argument in a negative form. This requires that the argument must "deny the consequent"

(employ *modus tollens*) in order to contradict the antecedent. Here is the form of the argument that is required:

First Premise: If the Fox Flood Model (FFM) is sound, then X should have occurred.

Second Premise: X has not occurred.

Conclusion: The Fox Flood Model (FFM) is not sound.

The scientist repeatedly attempts to falsify his hypothesis (cf. Fox, 2024, Appendix Q). Each time he fails to falsify his hypothesis; he gives greater credibility to the hypothesis. Note that he never **conclusively** proves his hypothesis by this method – he just shows that it has a higher probability.

Atheists, agnostics, and old Earth creationists (AAOEC) have the age of the Earth to be about 4.5 billion years (4,500 million years). The FFM has the Universe (including the Earth) to be less than 10,000 years old. Judson (pp. 371-372) claims the present erosion rate would reduce the continents to sea-level in less than 34 million years and Kennedy (pp. 497-498) claims that the present erosion rate would reduce the continents to sea-level in less than 25 million years.

First Premise: If the Fox Flood Model (FFM) regarding the age of the Earth is unsound, then the continents should have eroded to sea-level.

Second Premise: The continents have not eroded to sea-level. (cf. pp. 49, 50, 345, 346, and 425)

Conclusion: The Fox Flood Model (FFM) regarding the age of the Earth is not unsound (it is not disproven).

Let us test the AAOEC – atheist, agnostic, and old-Earth creationist geologic model (AAOECGM).

First Premise: If the AAOECGM regarding the age of the Earth is sound, then the continents should have eroded to sea-level. (cf. pp. 49, 50, 345, 346, and 425)

Second Premise: The continents have not eroded to sea-level.

Conclusion: The AAOECGM is not sound.

Therefore, the present AAOECGM (including *punctuated uniformitarianism*) has been proven to be unsound – it is disproven.

The FFM must have coal and petroleum to be formed in short periods of time. Pennisi claims that both coal and petroleum can be formed in a few years (pp. 121-125). Larsen (p. 316) claims that coal can be formed in short periods of time. Here is how some AAOEC's have attacked the claim that the Earth is not billions of years old.

First Premise: If the Fox Flood Model (FFM) regarding the age of the Earth is sound, then (from the formation of coal and/or petroleum argument) it should be possible for both coal and petroleum to be formed in short periods of time.

Second Premise: It is not possible for both coal and petroleum to be formed in short periods of time. (This has been the false claim of some AAOEC advocates.)

Conclusion: The Fox Flood Model (FFM) is not sound (has been falsified – disproven).

Since the consequent of this argument (it should be possible for both coal and petroleum to be formed in short periods of time) is true, the AAOEC has not falsified my first premise. I am not making the claim (committing the fallacy of *affirming the consequent*) that I have proven that the Fox Flood Model (FFM) regarding the age of the Earth is sound by this argument; I am only claiming that I have answered the AAOEC argument here. It still remains logically possible that the AAOEC might set forth another argument that the Earth is millions of years old.

Let us test the atheist, agnostic, and/or old-Earth creationist geologic model (AAOECGM) regarding this claim.

First Premise: If either coal or petroleum (or both) require millions of years to form, then it is necessary for the Earth to be millions of years old.

Second Premise: Either coal or petroleum (or both) require millions of years to form.

Conclusion: It is necessary for the Earth to be millions of years old.

This is an argument that some AAOEC – atheists, agnostics, and old Earth creationists have made in the past. In order to test this argument, we must not *deny the antecedent* and claim that we have falsified the consequent. Since the antecedent has been falsified (Neither coal nor petroleum [nor both]

require millions of years to form.), this particular argument for the Earth being millions of years old cannot be sound. It still remains logically possible that the AAOEC might be able to prove the Earth is millions of years old from other arguments. Therefore, we will frame the argument to test it by a valid logical process *denying the consequent – modus tollens*. Our argument becomes:

> First Premise: If it is necessary for the Earth to be millions of years old (from the AAOEC formation of coal and/or petroleum argument), then either coal or petroleum (or both) require millions of years to form.
>
> Second Premise: Neither coal nor petroleum (nor both) require millions of years to form.
>
> Conclusion: It is not necessary for the Earth to be millions of years old (from the AAOEC formation of coal and/or petroleum argument).

The AAOEC argument on coal and petroleum formation was fallacious – it committed the logical fallacy of arguing from ignorance (*argumentum ad ignorantiam*).

> The fallacy of the *appeal to ignorance* occurs when advocates maintain that something cannot be so because they, or the audience, have never heard of it. Uninformed persons, for example, at one time declared the telephone to be an impractical gadget because "Everyone knows you can't talk over wires." (Freeley, p. 169)

It is common for the AAOEC to commit this logical fallacy. It is also possible for theists to commit this logical fallacy. Proving that it is possible for both coal and petroleum to be formed in short periods of time does not necessarily prove that they were formed in short periods of time. The FFM provides an excellent explanation of how coal could have been formed – organic matter that was transformed into coal was covered by sediment and water several thousand feet deep covered it and the resulting pressure formed the coal. Coal could have also been formed under the ice sheets by the weight of the ice cf. (Matthews, p. 653) and (Tyree, p. 296). Since bacteria assimilates organic matter fairly quickly, it is not reasonable to think that organic matter took thousands or even millions of years to transform into coal. Therefore, the FFM is more reasonable than the present AAOECGM.

The FFM has the antediluvian Earth to have an increased barometric pressure (about 3 times the present atmosphere 3 bars – Yapp and Poths, p. 342), and an increased oxygen (O_2) content in the atmosphere (about 35% compared with the present 21% [Hecht, 1993, p. 11], Berner [1989], Landis [1993, p. 294], and [Graham *et al.*, p. 117]). The antediluvian Earth was shielded from harmful radiation (radiocarbon [$_6C^{14}$], UV [UVb and UVc] light, x-rays, cosmic rays, etc.) by a water vapor canopy (cf. Chapter 6).[356]

First Premise: If the FFM is sound, then Earth's antediluvian atmosphere had a greater barometric pressure and a greater oxygen (O_2) content.
Second Premise: The FFM is sound.
Conclusion: Earth's antediluvian atmosphere had a greater barometric pressure and a greater oxygen (O_2) content.

Since the hypothesis is not falsified – it is given credibility. The AAOECGM does not have an adequate explanation of the antediluvian atmosphere (ancient barometric pressure and oxygen [O_2] levels); therefore, the FFM is more reasonable than the present AAOECGM.

The FFM has the antediluvian atmosphere having neither clouds nor rainfall in accordance with the Scriptures (Gen. 2:5-6 and 9:12-17). Note the following argument:

First Premise: If the FFM is sound, then Earth's antediluvian atmosphere did not have either clouds or rainfall.
Second Premise: The FFM is sound.
Conclusion: Earth's antediluvian atmosphere did not have either clouds or rainfall.

The AAOEC denies the consequent – that the antediluvian atmosphere was both without clouds and without rainfall. The conclusion is supported by the following facts: (1) the antediluvian atmosphere had between 35% and 39% oxygen (Graham *et al.*, p. 117 and Berner 1989, p. 604) and (2) the antediluvian atmosphere had between 2 and 3 times the present atmospheric pressure.

[356] Du, et al. discuss the absorption of UV energy by water vapor.

The FFM has the antediluvian Earth's magnetic field to be more intensive – shielding the Earth from cosmic rays better than it does now. Since cosmic rays are one source of mutations, there would be fewer mutations to occur. The AAOECGM actually requires mutations to affect organic macroevolution!

The FFM also explains the apparent rapid changes (in direction) of the Earth's magnetic field – as evidenced from remanent magnetism (Coe and Prévot, p. 297 and Lewin, p. 26).

The FFM has the antediluvian soil to be near optimum fertility.

First Premise: If the Fox Flood Model (FFM) regarding formation of the Earth is sound, then the antediluvian soil should have been near optimum fertility.

Second Premise: The Fox Flood Model (FFM) regarding formation of the Earth is sound.

Conclusion: The antediluvian soil should have been near optimum fertility.

This conclusion becomes part of the first premise of the next argument:

First Premise: If the antediluvian soil were near optimum fertility, then soil that is under the Greenland ice-caps should be near optimum fertility.

Second Premise: The antediluvian soil was near optimum fertility.

Conclusion: The soil that is under the Greenland ice-caps should be near optimum fertility.

This is one of my hypotheses that can be tested.

The FFM explains mountain-building processes.

First Premise: If the Fox Flood Model (FFM) is sound, then the planet that God used to cause the flood could raise some mountains by gravity.

Second Premise: The Fox Flood Model (FFM) is sound.

Conclusion: The planet that God used to cause the flood could raise some mountains by gravity.

The FFM provides a sufficient explanation for some orogenesis. The AAOECGM has no plausible explanation for some orogenesis. This is admitted by Wilson (p. 445), Eardley (p. 189), and Hapgood (1970, p. 193). We do not want to make an argument from ignorance (*argumentum ad ignorantiam*) and claim that every AAOECGM is unsound because the present models do not explain some orogenesis. The present AAOEC needs to "try again" to form a new hypothesis that explains all orogenesis. This makes the FFM more reasonable than the present AAOECGM.

The FFM explains the retrograde rotation of Venus.

First Premise: If the Fox Flood Model (FFM) is sound, then the planet that God used to cause the flood could cause Venus to rotate retrograde.

Second Premise: The Fox Flood Model (FFM) is sound.

Conclusion: The planet that God used to cause the flood could cause Venus to rotate retrograde.

The FFM provides a sufficient condition for explaining the retrograde rotation of Venus. The AAOEC uniformitarian solar-system model should have all the planets either rotating in the same direction or in lock-step with the Sun – tidally-locked.

First Premise: If the AAOEC uniformitarian solar-system model is sound, then all the planets should either be rotating either in the same direction or in lock-step with the Sun – tidally-locked.

Second Premise: Some of the planets are neither rotating in the same direction (Venus is rotating retrograde) nor are tidally-locked with the Sun.

Conclusion: The AAOEC uniformitarian solar-system model is not sound.

This argument only falsifies the present uniformitarian solar-system model. The FFM is more reasonable than the present AAOEC uniformitarian solar-system model.

The FFM explains quick-frozen animals and plants.

First Premise: If the Fox Flood Model (FFM) is sound, then the cosmic ice could quick-freeze mammoths – suffocating them.

Second Premise: The Fox Flood Model (FFM) is sound.

Conclusion: The cosmic ice could quick-freeze mammoths – suffocating them.

The FFM provides a sufficient condition for quick-frozen mammoths – even explaining how they died – suffocation). The AAOEC uniformitarian model neither has a mechanism for the extreme cold that quick-froze the mammoths (in the late summer) nor can explain how they died. The AAOEC need to revise their hypothesis and try again. Therefore, the FFM is more reasonable than the AAOEC uniformitarian model.

The FFM explains how ice sheets were formed.

First Premise: If the Fox Flood Model (FFM) is sound, then both the presence and locations of the ice sheets can be reasonably explained by cosmic ice.

Second Premise: The Fox Flood Model (FFM) is sound.

Conclusion: Both the presence and locations of the ice sheets can be reasonably explained by cosmic ice.

Now, we will examine the AAOECGM regarding the ice sheets.

First Premise: If the AAOECGM Model is sound, then it has a sufficient explanation for both the presence and locations of the ice sheets.

Second Premise: It does not have a sufficient explanation for either the presence or the locations of the ice sheets.

Conclusion: The AAOECGM Model is not sound,

Reasons that extremely cold climates cannot produce glaciers were given in earlier chapters (Hapgood, 1970, pp. 49-50 and Hollingworth, p. 7). The AAOEC needs to revise their model and try again. Therefore, the FFM is more reasonable than the present AAOECGM.

The FFM explains climate-changes since the flood.

First Premise: If the Fox Flood Model (FFM) is sound, then it has a sufficient explanation for climate changes since the flood.

Second Premise: The Fox Flood Model (FFM) is sound.

Conclusion: It has a sufficient explanation for climate changes since the flood.

It is possible that the AAOECGM is able to give an adequate explanation for climate changes. However, the AAOECGM does not have an adequate explanation for the ice sheets. The AAOEC needs to revise their hypothesis and set forth a hypothesis that explains how ice sheets were formed. Therefore, the FFM is more reasonable than the present AAOECGM.

The FFM explains the presence of both marine and terrestrial fossils in succeeding layers (strata), since the cratons are claimed to be stable by geologists (Kennedy, pp. 494-495).

First Premise: If the Fox Flood Model (FFM) is sound, then it explains the presence of both marine and terrestrial fossils in succeeding layers (strata).

Second Premise: The Fox Flood Model (FFM) is sound.

Conclusion: It explains the presence of both marine and terrestrial fossils in succeeding layers (strata).

Now, let us examine the AAOECGM.

First Premise: If the AAOECGM is sound, then it explains the presence of both marine and terrestrial fossils in succeeding layers (strata). (Cf. pages 293-295.)

Second Premise: It does not explain the presence of both marine and terrestrial fossils in succeeding layers (strata).

Conclusion: The AAOECGM is not sound.

Since cratons are stable, there is no mechanism to lower (depositing marine fossils) and elevate the continents (depositing terrestrial fossils) to explain the presence of both marine and terrestrial fossils in succeeding layers (strata) in the AAOECGM – often in several layers. Therefore, the FFM is more reasonable than the present AAOECGM.

The FFM explains the presence of impact craters in rings around the Earth that are filled with sediment (Anonymous #9, p. 26; Shaw, p. 206; Monastersky, Jan. 28, 1995, p. 58; Wichman and Wood, abstract).

First Premise: If the Fox Flood Model (FFM) is sound, then it has a rational explanation for impact craters in rings around the Earth that are filled with sediment.

Second Premise: The Fox Flood Model (FFM) is sound.
Conclusion: It has a rational explanation for impact craters in rings around the Earth that are filled with sediment.

Now, let us examine the AAOECGM.
First Premise: If the AAOECGM is sound, then it has a rational explanation for impact craters in rings around the Earth that are filled with sediment.
Second Premise: It does not have a rational explanation for impact craters in rings around the Earth that are filled with sediment.
Conclusion: The AAOECGM is not sound.
Again, the FFM is more rational than the present AAOECGM.

The FFM explains how minerals (copper, gold, etc.) are in layers (veins) in various parts of the Earth.
First Premise: If the Fox Flood Model (FFM) is sound, then various minerals would be found in layers (veins) in the sediment.
Second Premise: The Fox Flood Model (FFM) is sound.
Conclusion: Various minerals would be found in layers (veins) in the sediment.
Again, the FFM is more rational than the AAOECGM.
Now, let us examine the AAOECGM.
First Premise: If the AAOECGM is sound, then various minerals would not be found in layers (veins) in the sediment.
Second Premise: Various minerals are found in layers (veins) in the sediment. (*Modus tollens*)
Conclusion: The AAOECGM is not sound.
Punctuated uniformitarian events – tsunamis from bolides and volcanoes – do not normally sort minerals into veins. The rotating motions of tides will sort minerals into veins.

The FFM explains why dinosaur DNA has been found intact.
First Premise: If the Fox Flood Model (FFM) is sound, then dinosaur DNA could be found intact.
Second Premise: The Fox Flood Model (FFM) is sound.
Conclusion: Dinosaur DNA could be found intact.

Now, let us examine the AAOECGM.

First Premise: If the AAOECGM is sound, then dinosaur DNA should not be found intact.

Second Premise: Dinosaur DNA has been found intact.

Conclusion: The AAOECGM is not sound.

Dinosaur DNA should not be intact after millions of years. This is evident from the responses of various AAOEC when it was first claimed that dinosaur DNA had been found (cf. pp. 386-387). Therefore, the FFM is more reasonable than the present AAOECGM.

The FFM explains the presence of ice in the craters (at the poles) of both Mercury and the Moon.

First Premise: If the Fox Flood Model (FFM) is sound, then ice could be in the craters (at the poles) of both Mercury and the Moon.

Second Premise: The Fox Flood Model (FFM) is sound.

Conclusion: Ice is in the craters (at the poles) of both Mercury and the Moon.

Now, let us examine the AAOECGM.

First Premise: If the AAOECGM is sound, then ice could not be in the craters (at the poles) of both Mercury and the Moon.

Second Premise: Ice is in the craters (at the poles) of both Mercury and the Moon.

Conclusion: The AAOECGM is not sound.

Ice should not be in craters at the poles of Mercury for at least two reasons: (1) Ice coming from comets could have such a velocity that it would be vaporized upon impact (Lewis, p. 136) and (2) Ice could not exist for billions of years that close to the Sun (even in shaded craters). Again, the AAOECGM has been shown to be irrational and the FFM is more reasonable.

The FFM provides a mechanism for the preservation of fossils. "Fossilization, even under the most favorable conditions, is a rare accident." (Hapgood, 1970, p. 69) cf. David G. Smith (pp. 363 and 365)

First Premise: If the Fox Flood Model (FFM) is sound, then it provides an excellent explanation for the preservation of fossils.
Second Premise: The Fox Flood Model (FFM) is sound.
Conclusion: It provides an excellent explanation for the preservation of fossils.

Now, let us examine the AAOECGM.
First Premise: If the AAOECGM is sound, then it provides an excellent explanation for the preservation of fossils.
Second Premise: It does not provide an excellent explanation for the preservation of fossils.
Conclusion: The AAOECGM is not sound.
Under uniformitarian conditions various organisms feed on dead and decaying organisms and they are not fossilized. Even in sediment, benthic organisms feed on organic matter. Therefore, the FFM is more reasonable than the present AAOECGM.

The FFM explains why tectonic plates move in different directions.
First Premise: If the Fox Flood Model (FFM) is sound, then it explains why tectonic plates move in different directions.
Second Premise: The Fox Flood Model (FFM) is sound.
Conclusion: It explains why tectonic plates move in different directions.

Now, let us examine the present AAOECGM.
First Premise: If the present AAOECGM is sound, then it explains why tectonic plates move in different directions.
Second Premise: The present AAOECGM does not explain why tectonic plates move in different directions.
Conclusion: The present AAOECGM is not sound.
Therefore, the FFM is more reasonable than the present AAOECGM because it gives a sufficient explanation (vector forces from Mercury's gravity) of plate movement.

The FFM explains why the core of the Earth rotates faster than the rest of the Earth.

First Premise: If the Fox Flood Model (FFM) is sound, then it explains why the core of the Earth rotates faster than the rest of the Earth.
Second Premise: The Fox Flood Model (FFM) is sound.
Conclusion: It explains why the core of the Earth rotates faster than the rest of the Earth.

Now, let us examine the AAOECGM.
First Premise: If the present AAOECGM is sound, then it explains why the core of the Earth rotates faster than the rest of the Earth.
Second Premise: It does not explain why the core of the Earth rotates faster than the rest of the Earth.
Conclusion: The present AAOECGM is not sound.
The AAOEC needs to revise their hypothesis and try again to explain why the core of the Earth rotates faster than the rest of the Earth. Therefore, the FFM is more reasonable than the present AAOECGM.

The FFM explains why the magnetic field of the Earth wanders (moves about) and why it is not aligned with the geographic poles.
First Premise: If the Fox Flood Model (FFM) is sound, then it explains why the magnetic field of the Earth wanders (moves about) and why it is not aligned with the geographic poles.
Second Premise: The Fox Flood Model (FFM) is sound.
Conclusion: It explains why the magnetic field of the Earth wanders (moves about) and why it is not aligned with the geographic poles.

Now, let us examine the AAOECGM.
First Premise: If the present AAOECGM is sound, then it explains why the magnetic field of the Earth wanders (moves about) and why it is not aligned with the geographic poles.
Second Premise: It does not explain why either the magnetic field of the Earth wanders (moves about) or why it is not aligned with the geographic poles.
Conclusion: The present AAOECGM is not sound.

The AAOEC needs to frame a new hypothesis that explains why the magnetic field wanders and why it is not aligned with the geographic poles. Therefore, the FFM is more reasonable than the present AAOECGM.

The FFM explains why the ocean floors do not have large amounts of sediment on them. Hapgood (1970, p. 25 [cf. p. 49]), Dott and Prothero (p. 142 [cf. p. 49]),

First Premise: If the Fox Flood Model (FFM) is sound, then it explains why the ocean floors do not have large amounts of sediment on them.

Second Premise: The Fox Flood Model (FFM) is sound.

Conclusion: It explains why the ocean floors do not have large amounts of sediment on them.

The advocates of the AAOECGM expected that there would be deep layers of sediment on the ocean floors and were surprised to find they did not exist (Hapgood, p. 25 and Dott and Prothero, p. 142). In order to respond to this problem, they hypothesized that the sediment was "recycled" by subduction. This hypothesis created another problem for the AAOEC, the amounts of sediment implied that subduction recycled the sediment at short enough time spans that there should not be any old sedimentary rocks. They should have been recycled about 25 times (Judson, pp. 372-373). Of course, the AAOEC will respond that subduction only occurs on the ocean floors. Subduction is only supposed to occur when oceanic plates slide under continental plates. Since most plates move at speeds of considerably less than 4 inches (10 cm) per year, where is all of the sediment that the rivers should have deposited in the ocean basins (Judson, pp. 371-372 and Kennedy, pp. 497-498)?

Now, let us examine the AAOECGM.

First Premise: If the AAOECGM is sound, then it explains why the ocean floors do not have large amounts of sediment on them.

Second Premise: It does not explain why the ocean floors do not have large amounts of sediment on them.

Conclusion: The AAOECGM is not sound.

The AAOEC needs to revise their hypothesis and try again. From this we conclude that the FFM is more reasonable than the present AAOECGM.

The FFM would likely have debris from the crust of Mercury in some of the craters on the Earth.

First Premise: If the Fox Flood Model (FFM) is sound, then there is likely to be debris from the crust of Mercury in some craters on the Earth. [357]

Second Premise: The Fox Flood Model (FFM) is sound.

Conclusion: There is likely to be debris from the crust of Mercury in some craters on the Earth.

This hypothesis could be tested.

Now, let us examine the AAOECGM.

First Premise: If the AAOECGM is sound, then there should not be debris from the crust of Mercury in some craters on the Earth.

Second Premise: There is debris from the crust of Mercury in some craters on the Earth. (*modus tollens*)[358]

Conclusion: The AAOECGM is not sound.

This would be an excellent test for the FFM hypothesis and the present AAOECGM hypothesis.

The FFM would likely have debris from the crust of Mercury in some of the ice (glaciers) on the Earth.

First Premise: If the Fox Flood Model (FFM) is sound, then there is likely to be debris from the crust of Mercury in some of the ice (glaciers) on the Earth.

Second Premise: The Fox Flood Model (FFM) is sound.

Conclusion: There is likely to be debris from the crust of Mercury in some of the ice (glaciers) on the Earth.

This hypothesis could be tested.

Now, let us examine the AAOECGM.

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[357] The FFM also predicts that there should be debris from the Moon in craters.

[358] If this premise were proven, it would falsify the present AAOECGM.

First Premise: If the AAOECGM is sound, then there should not be debris from the crust of Mercury in some of the ice (glaciers) on the Earth.
Second Premise: There is debris from the crust of Mercury in some of the ice (glaciers) on the Earth. (*modus tollens*)[359]
Conclusion: The AAOECGM is not sound.

This would be an excellent test for the FFM hypothesis and the present AAOECGM hypothesis.

The FFM would have an optimum amount of oxygen O_2 (about 35%) and optimum barometric pressure (about 2.5 to 3 times the present atmospheric pressure) in the antediluvian atmosphere. This hypothesis could be tested with hyperbaric chambers.

First Premise: If the Fox Flood Model (FFM) is sound, then there would be an optimum amount of oxygen O_2 (about 35%) and optimum barometric pressure (about 2.5 to 3 times the present atmospheric pressure) in the antediluvian atmosphere.
Second Premise: The Fox Flood Model (FFM) is sound.
Conclusion: There would be an optimum amount of oxygen O_2 (about 35%) and optimum barometric pressure (about 2.5 to 3 times the present atmospheric pressure) in the antediluvian atmosphere.

Of course, we would need to falsify the first premise (by denying the consequent – *modus tollens*) in order to disprove the hypothesis. If this hypothesis were verified to be true, it might change how hyperbaric chambers were used – present hyperbaric chambers use 100% oxygen O_2 and only keep the patient in the chamber for a short period of time (because 100% oxygen O_2 is toxic). Patients could be left in the chamber for extended periods of time – obtaining much better results.

Now, let us examine the AAOECGM. The AAOECGM does not hypothesize either an optimum barometric pressure or an optimum oxygen content for the atmosphere. If both or either an optimum barometric pressure and/or an optimum oxygen

[359] If this premise were proven, it would falsify the present AAOECGM.

content for the atmosphere exists, then the FFM is more rational than the present AAOECGM.

The FFM explains the presence of undersea archaeological sites. The dating of the lowering of the sea-levels from ice-ages of the AAOECGM has some problems with the presence of these sites. Therefore, the FFM is more reasonable than the present AAOECGM.

The FFM explains the presence of large mammals (mammoths etc.) in the arctic regions. The AAOECGM does not explain how large numbers of these mammals survived on tundra vegetation. If present attempts (By George Church et al.) to resurrect mammoths are successful, we will have a good test for the FFM hypothesis that elephants (including mammoths) possibly cannot survive in extremely cold regions. It is evident that neither African nor Asian elephants can survive in cold climates. It also remains to be seen whether or not mammoths can survive on tundra vegetation.

The FFM explains the logarithmic decrease in the longevity of postdiluvian men (cf. Appendix A). Of course, the AAOEC will say that the genealogies of the Bible are fictitious. The high coefficient of correlation is strong evidence for the veracity of the genealogies.

The FFM explains the submarine canyons that go to depths of about 10,000 feet (Von Engeln and Caster, pp. 320-321 – quoted on pp. 120-121). Tarbuck and Lutgens have these canyons to depths of about 3 kilometers[360] (p. 310 – quoted on page 122). Since seawater has a density of about 1/3 the average density of the rocks of the continents, 30,000 feet of seawater covering the continents during the tidal flood would depress the continents about 10,000 feet into the magma – preserving isostasy. The mountains would be lowered by about 10,000 feet – this is what the Scripture say happened (Ps. 104:5-9). When the waters of the flood flowed off the continents, the mountains were raised – due to adjustments

[360] 3 kilometers = 9,843.5 feet.

in isostasy. This occurred because of Archimedes' Principle. Von Engeln and Caster admit that the AAOEC cannot explain the submarine canyons going to depths of 10,000 feet.

CONCLUSION

None of the hypotheses of the FFM have been falsified by either the Scriptures or empirical evidence – science. Several of the implications (hypotheses) of the AAOECGM have been falsified. This only means that the AAOECGM that was tested is unsound. It does not necessarily mean that other AAOECGM are unsound. However, the falsification of the AAOEC claim that the Earth is billions of years old seems to have insurmountable obstacles.

The AAOEC need to develop a new hypothesis that deals with the factors that have been falsified – including the problems with the age of the Earth.

Scientific information is worthless, if it is not evaluated by an honest (cf. Appendixes B and E) and rational (cf. Fox, 2024) person.

Predictions by Marion R. Fox

The AAOEC will probably continue to ignore the facts and will not deal with these problems. Ignoring evidence is common, but it is understandable because the AAOEC do not believe that absolute truth exists – at least in the area we are concerned with in this treatise. Raup (pp. 17, 21, and 22 [quoted on p. 293]), Brancazio (p. 896 [quoted on p. 313]), and Cremo all admit that AAOEC ignore evidence. Cf. Fox, 2024, Appendix V also. Neither atheists nor agnostics have an objective standard of ethics – this is why they can blatantly ignore evidence.

APPENDIX A

CALCULATIONS FROM THE CHRONOLOGY OF THE LXX

The LXX has some different numbers in Gen. 11:10-26 than the Masoretic Text. In Chapter 11 we calculated the year of the flood from the ages given in the Masoretic Text. We will recalculate the longevity and dates from the LXX, Samaritan Pentateuch, Josephus, etc. (cf. Appendix B) in this appendix.

Calculation of Regression with Cainan in the Genealogy

I am confident that Cainan was in the genealogy between Arpachshad and Shelah because Luke has him in his genealogy (Lk. 3:36). Therefore, I have included him in my regression calculations. I have used the times given in the LXX, Samaritan Pentateuch, and Josephus for Cainan (the only sources that I have) to provide data for these calculations.

The LXX differs from the Masoretic Text in the ages of some of the postdiluvian Patriarchs when their sons were born. For these calculations, I have kept the ages of the patriarchs the same as the Masoretic Text (in Table 8 p. 241). (Later in this appendix, I will recalculate the regression with the ages given in the LXX [Table 16 p. 451].)

Possible Reasons for Omitting Cainan in the Masoretic Text

It is certainly possible that the Masoretes had evil motives for omitting Cainan (to have Shem to be a contemporary of Abraham in order to deal with Ps. 110:4 [cf. Donnelly]). The Jews claim that Melchizedek was Shem.

Another possible reason is that they omitted Cainan to serve as a memory hook (a tool to memorize the genealogies). Matthew did this (by the direction of the Holy Spirit) in Mt. 1:1-17. Note how Matthew grouped the ancestors of Jesus into groups of fourteen in verse 17. This was a common practice especially when few people had actual copies of the Scriptures.

Mt. 1:17 So all the generations from Abraham unto David are fourteen generations; and from David unto the carrying away to Babylon fourteen generations; and from the carrying away to Babylon unto the Christ fourteen generations.

Note how there were ten generations from The Creation to The Flood and there were ten generations from The Flood to Abraham.

Table 10 – Antediluvian Patriarchs (Masoretic Text)

Patriarch	YAC* of birth	YAC* of death	Age at death
Adam	NA	930	930
Seth	130	1042	912
Enosh	235	1140	905
Kenan	325	1235	910
Mahalalel	395	1290	895
Jared	460	1422	962
Enoch	622	987	365
Methuselah	687	1656	969
Lamech	874	1651	777
Noah	1056	2006	950
Shem	1558	2156	600

(YAC* = Years after creation)

Table 11 – Antediluvian Patriarchs (LXX Text)

Patriarch	YAC* of birth	YAC* of death	Age at death
Adam	NA	930	930
Seth	230	1142	912
Enosh	435	1340	905
Kenan	625	1535	910
Mahalalel	795	1690	895
Jared	960	1922	962
Enoch	1122	1487	365
Methuselah	1287	2256	969
Lamech	1454	2251	777
Noah	1642	2612	950
Shem	2144	2762	600

(YAC* = Years after creation)

Since Noah was 600 years old when the flood came (Gen. 7:6) and only eight people survived the flood (Gen. 7:7, 13, and 1

Pet. 3:20), we have a problem with the LXX text here. If we take the date (YAC) of Noah's birth and add 600 to it, we get the flood occurring 2242 years after Creation (YAC). The chronology of the LXX has both Methuselah and Lamech dying after the flood. The Jews did not have a reason to corrupt the text of the antediluvian genealogy. We will consider the postdiluvian genealogy later.

Note that in Table 12 (below) you have ten generations from Shem to Abraham, if you leave out Cainan.

Since Methuselah died just before the flood (the same year), there were 1656 years from Creation to The Flood (according to the Masoretic Text). If the years are from one's last birthday, on average a person is ½ year older than their given age. This gives us five extra years. So, there were about 1,660 years from The Creation to The Flood. If we had ½ year extra time for each patriarch from Shem to Messiah for the age of each person, we would probably have The Creation to occur about 4,460 BC. If we follow the Masoretic Text. However, we must add in Cainan, and this puts The Creation at about 4,660 BC. The ages of these patriarchs are obviously rounded numbers (Ruth 1:4, Dan. 5:31, Lk. 3:23, 8:42, Acts 13:18, 19, and Rom. 4:19). Since we do not know how they rounded their ages, each age is only precise to ±1 year.

Another problem relates to the age of Terah when he begat Abram (Abraham). It appears that we have a Hebrew idiom in both Gen. 5:32 and 11:26.

> Gen. 5:32 And Noah was five hundred years old: and Noah begat Shem, Ham, and Japheth.

If we assume that Shem was the firstborn (because he is listed first), Shem should be 100 years old when the flood came, because the flood came when Noah was 600 years old (Gen. 7:6). However, since Shem was 100 years old two years after the flood (Gen. 11:10) we have a two-year discrepancy if we assume Shem, was the firstborn. No doubt, Shem was listed first because Messiah came through him. Since Shem

was born two years after Noah's three sons began to be born, we conclude that it is almost certain that Shem was the second son. The problem with whoever was firstborn is seen in comparing the ASV and KJV translations:

> Gen. 10:21 (ASV) And unto Shem, the father of all the children of Eber, the elder brother of Japheth, to him also were children born.

> Gen. 10:21 (KJV) Unto Shem also, the father of all the children of Eber, the brother of Japheth the elder, even to him were *children* born.

Normally, the firstborn would be listed first (unless there was something about him that would cause him to forfeit that right). Certainly, Ham sinned (Gen. 9:20-27), but from the wording of Gen. 9:24, it appears that Ham was the youngest. Keil and Delitzsch discuss the problem with the translation of the Hebrew adjective qâṭôn (קטן – Strong's #H6996) translated *youngest* (ASV) or *younger* (KJV). This adjective might depict Ham as the least because of his sin, not because of his age. I conclude that Ham was probably the oldest, Shem was second, and Japheth was the youngest (as the ASV depicts it in Gen. 10:21). My point, after this brief digression is that the listing of Gen. 5:32 is probably an idiom with the year of the firstborn being given and then the other sons are listed, but the father's age when they were born was not given. We also see in this passage that the most prominent one (the one in Messiah's lineage) was listed first even though he was not firstborn.

We have a similar situation in Gen. 11:26 and we know that Abram (Abraham) cannot be the oldest, but he (being in the lineage of Messiah) is listed first.

> Gen. 11:26 And Terah lived seventy years, and begat Abram, Nahor, and Haran.

We conclude that Terah was seventy years old when the first of the three sons listed in Gen. 11:26 was born. Terah was

205 years old when he died (Gen. 11:32). After Terah died, Abram went to Canaan (Acts 7:4). Abram (Abraham) was 75 years old when he left Haran (Gen. 12:4). This means that Terah was probably 130 years old when Abram was born (assuming that Abram left Haran the year of Terah's death).

If we take the LXX as our standard, we have 2260 years from The Creation to The Flood. We have 1772 years from The Flood to the birth of Moses and Moses was 80 when the exodus occurred. If the exodus occurred in 1446 BC, we have The Flood in 3298 BC and Creation in about 5478 BC.

However, we have already shown that the LXX is corrupt in the ages of the antediluvian patriarchs when they beget their sons (cf. pp. 443-444). We will prove later in this book that the Masoretic Text is corrupt in the ages of the postdiluvian patriarchs when they begat their sons and in omitting Cainan (Gen. 11:12 and Lk. 3:36). Since the Jews did not have a reason to corrupt the text relating to the antediluvian patriarchs (cf. Donnelly), but did have a reason to corrupt the text relating to the postdiluvian patriarchs, I will go with the Masoretic text for the antediluvian patriarchs and the LXX text for the postdiluvian patriarchs.

Surely, God – through His providence – preserved the correct information regarding the genealogy of both the antediluvian and postdiluvian patriarchs. It seems reasonable that God (providentially) preserved the correct genealogy for the antediluvian patriarchs in the Masoretic Text and God preserved (providentially) the correct genealogy for the postdiluvian patriarchs in the LXX.

From the LXX we conclude that the flood occurred in 3298 BC and from the Masoretic Text we add another 1656 years from Creation to the Flood. This puts Creation to be in about 4954 BC. We will ignore the lack of precision due to the rounding of the ages of these patriarchs. The rounding of the ages would give us ± 1 year for each patriarch. The flood occurred 1656 ± 9 years after the creation.

Table 12

Longevity of Postdiluvian Patriarchs (Masoretic Text)

PATRIARCH	AGE AT DEATH	BIRTH YAF*	DEATH YAF*
Shem	600	-98	502
Arpachshad	438	2	440
Cainan[361]	460	137	597
Shelah	433	172	605
Eber	464	202	666
Peleg	239	236	475
Reu	239	266	505
Serug	230	298	528
Nahor	148	328	476
Terah	205	357	562
Abraham	175	487	662
Ishmael	137	573	710
Isaac	180	587	767
Jacob	147	707	794
Levi	137	724	858
Joseph	110	738	848
Kohath	133	778	911
Amram	137	1069	1206
Aaron	123	1124	1247
Moses	120	1127	1247
Joshua	110	1167	1277
David	70	1657	1727

*YAF = years after flood

[361] This information is from Lk. 3:36 and the LXX (assuming that Cainan was 35 when he begat Shelah) – With Cainan in the genealogy Shem cannot be Melchizedek – Abraham was 15 when Shem died.

Graph 3

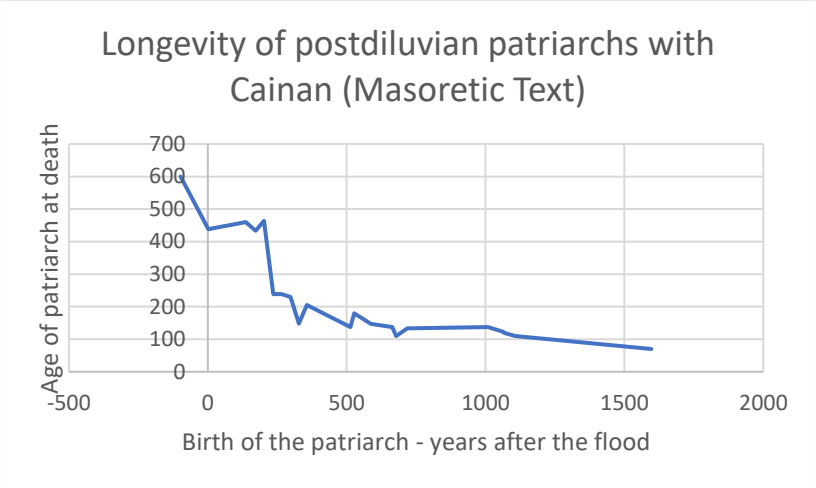

Longevity of postdiluvian patriarchs with Cainan (Masoretic Text)
Age of patriarch at death
700
600
500
400
300
200
100
0
-500
0
500
1000
1500
2000
Birth of the patriarch - years after the flood

Table 13

Log_e of the Longevity of Postdiluvian Patriarchs

PATRIARCH	Log_e of AGE AT DEATH	BIRTH YAF*	DEATH Years AF*
Shem	6.4	-98	502
Arpachshad	6.08	2	440
Cainan[362]	6.13	137	597
Shelah	6.07	172	605
Eber	6.14	202	666
Peleg	5.48	236	475
Reu	5.48	266	505
Serug	5.44	298	528
Nahor	5.0	328	476
Terah	5.32	357	562
Abraham	5.16	487	602
Ishmael	4.92	573	650
Isaac	5.19	587	707
Jacob	4.99	707	734
Levi	4.92	724	798
Joseph	4.7	738	788
Kohath	4.89	778	851
Amram	4.92	1069	1146
Aaron	4.81	1124	1187
Moses	4.79	1127	1187
Joshua	4.7	1167	1217
David	4.25	1657	1727

*YAF = years after flood

[362] This information is from Lk. 3:36 (assuming that Cainan was 35 when he begat Shelah – neglecting the LXX).

Graph 4

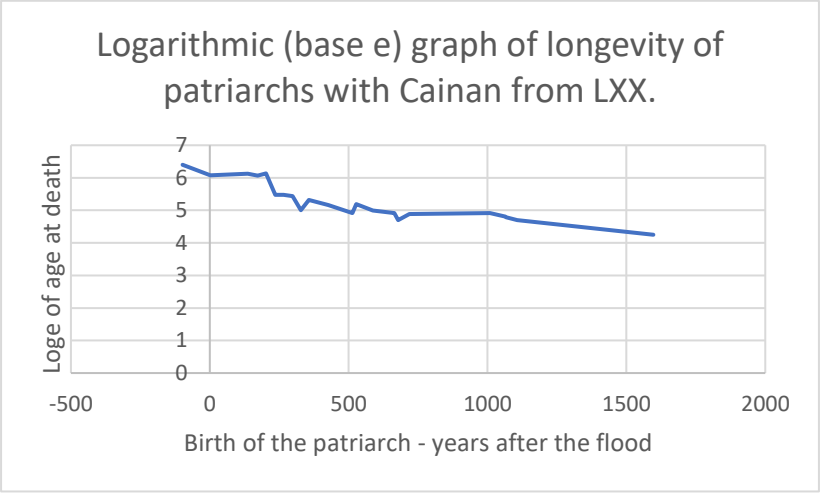


Table 14

Regression Analysis with Shem and Cainan

MATHEMATICAL RELATIONSHIP	VALUE OF THE COEFFICIENT
Coefficient of determination ρ^2	0.762
Coefficient of correlation ρ	0.873

Table 15

Regression Analysis with Cainan and Without Shem

MATHEMATICAL RELATIONSHIP	VALUE OF THE COEFFICIENT
Coefficient of determination ρ^2	0.734
Coefficient of correlation ρ	0.857

Table 16

Longevity of Postdiluvian Patriarchs From LXX

PATRIARCH	AGE AT DEATH	BIRTH YAF*	DEATH YAF*
Shem	600	-98	502
Arpachshad	438	2	440
Cainan	460	137	597
Shelah	433	267	700
Eber	464	397	861
Peleg	239	531	770
Reu	239	661	900
Serug	230	793	1023
Nahor	148	923	1071
Terah	205	1002	1207
Abraham	175	1132	1307
Ishmael	137	1218	1355
Isaac	180	1232	1412
Jacob	147	1292	1439
Levi	137	1369	1506
Joseph	110	1383	1493
Kohath	133	1423	1423
Amram	137	1714	1851
Aaron	123	1769	1892
Moses	120	1772	1892
Joshua	110	1812	1922
David	70	2302	2372

*YAF = years after flood

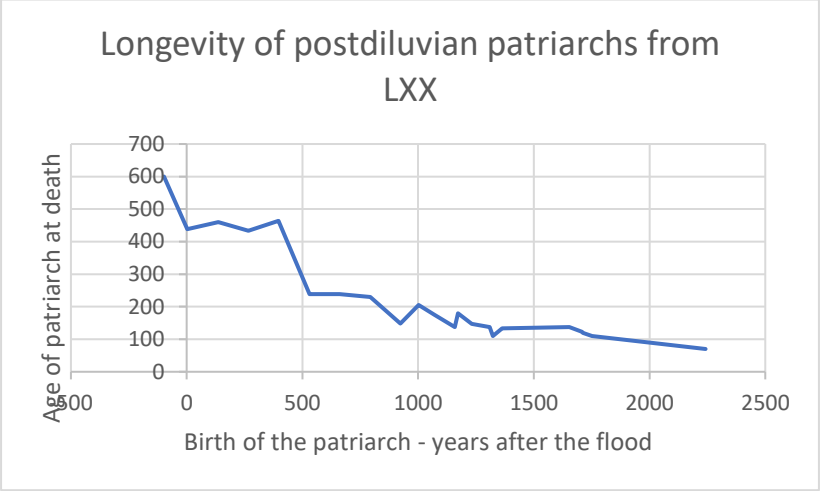
Table 17

Log_e of the Longevity of Postdiluvian Patriarchs From LXX

PATRIARCH	Log_e of AGE AT DEATH	BIRTH YAF*	DEATH Years AF*
Shem	6.4	-98	502
Arpachshad	6.08	2	440
Cainan	6.13	137	597
Shelah	6.07	267	700
Eber	6.14	397	861
Peleg	5.48	531	770
Reu	5.48	661	900
Serug	5.44	793	1023
Nahor	5.0	923	1071
Terah	5.32	1002	1207
Abraham	5.16	1132	1307
Ishmael	4.92	1218	1355
Isaac	5.19	1232	1412
Jacob	4.99	1292	1439
Levi	4.92	1369	1506
Joseph	4.7	1383	1493
Kohath	4.89	1423	1423
Amram	4.92	1714	1851
Aaron	4.81	1769	1892
Moses	4.79	1772	1892
Joshua	4.7	1812	1922
David	4.25	2302	2372

*YAF = years after flood

Graph 5



Graph 6

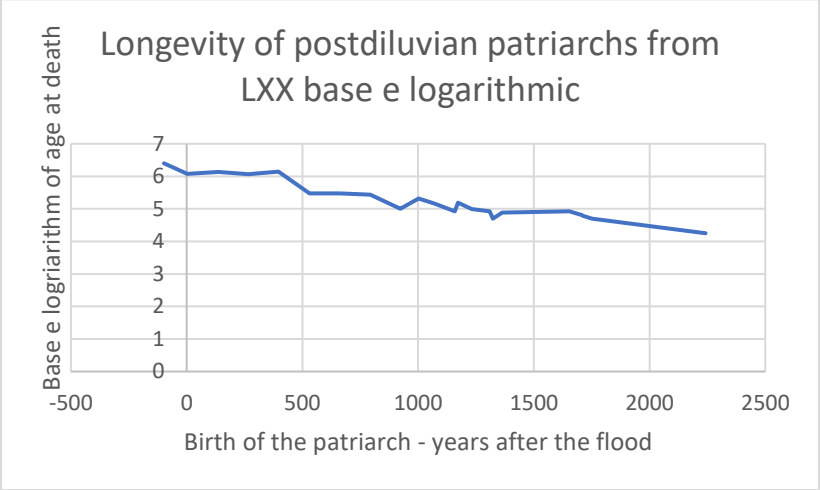


Table 19

Regression Analysis with Shem and Cainan

MATHEMATICAL RELATIONSHIP	VALUE OF THE COEFFICIENT
Coefficient of determination ρ^2	0.913
Coefficient of correlation ρ	0.956

Table 20

Regression Analysis with Cainan and Without Shem

MATHEMATICAL RELATIONSHIP	VALUE OF THE COEFFICIENT
Coefficient of determination ρ^2	0.898
Coefficient of correlation ρ	0.947

Were the Assumed Years of Birth Adjusted?

I deem it to be dishonest to assume values, then make calculations and then go back and modify the assumed values to fit the "trend line" that I obtained with the original data. Therefore, once I made the various assumptions about the ages of the various men when they fathered a son, I did not change the value. Assumptions had to be made about the age of Jacob when Levi was born, the age of Levi when Kohath was born, the age of Amram when Aaron was born,[363] and the age of Joshua when the exodus occurred. I explained the reasons for my assumptions in this volume and am convinced they are based upon reasonable information.

I assumed (in Chapter Eleven) that Jacob married Leah and Rachel before the fourteen years that he served Laban for

[363] This is based upon the assumption to Amram was 40 when he married Jochebed and Moses' sister (possibly Miriam) was born one year later, and she was 16 when Moses was born.

them. It seems to be evident (Gen. 29:27) that Rachel was given to Jacob seven days after he married Leah. Interpretation of Genesis 29-30 becomes quite problematic, if this is not true. The wording of Gen. 29:20 and Gen. 29:25 is thought (by some) to be saying that he served seven years before Laban gave him Leah. This would require that Jacob's twelve children (eleven sons and one daughter [Dinah]) all be born in a thirteen-year period of time. The births of these twelve children appear to be listed in chronological order. Leah gives birth to Reuben, Simeon, Levi, and Judah (Gen. 29:32-35). Then she stops bearing children (Gen. 29:35) – or possibly stops bearing sons. Then Rachel's handmaid (Bilhah) gives birth to Dan and Naphtali (Gen. 30:4-8). It appears that Leah then (after the birth of Naphtali) gave her handmaid (Zilpah) to Jacob (Gen. 30:9-13) and she gave birth to Gad and Asher. Next, Leah gave birth to Issachar, Zebulun, and Dinah (Gen. 30:15-21). Then Rachel gives birth to Joseph (Gen. 30:22-24). In the listing of the twelve tribes, they are usually grouped together by their mothers. We cannot be certain that there was not an overlapping of the children of Bilhah and Zilpah or even of Bilhah, Zilpah, and Leah.

It is axiomatic that there is a chronological order to the birth of these children (cf. Gen. 43:33). It is evident from Genesis 37:2 that Joseph is Jacob's next-to-the-youngest son. Therefore, he is younger than Zebulun. However, we cannot be certain that Joseph is younger than Dinah.

Allow me to discuss the possible age of Jacob when Levi was born. There are two possible scenarios regarding the time period of the births of Jacob's sons: (1) in the first scenario, Jacob married Leah and Rachel and then served the 14-year period for them. The oldest Levi could be when Jacob took his family back to Canaan was 17 (this assumes that Reuben was born one year after Jacob married Leah, Simeon was born 2 years after Jacob married Leah, and Levi was born 3 years after Jacob married Leah. (2) in the second scenario, Jacob married Leah and Rachel after he served Laban for seven years. This means that Leah's seven children were all born within a 13-year span of time. If we space Leah's children

(working backwards from Dinah) one year apart and give a two-year gap for when Leah left off bearing and assume Dinah was one year old when they went to Canaan, then Levi was six years old when Jacob returned to Canaan. It is virtually impossible for Levi to have been older than 17 or younger than 6 when Jacob returned to Canaan. With the assumptions that I made (cf. Chapter 11) Levi was 15 when Jacob returned to Canaan. If we change the age of Jacob at Levi's birth by adding 2 and subtracting 9 and recalculate the coefficient of correlation ρ, there is no appreciable effect on the value of ρ.

We can show a similar reasonably small range of values for the dates of the birth of Kohath and Joshua. Therefore, the dates of their births do not appreciably affect the value of ρ.

The year of birth of Amram was the value that has the least amount of certainty. I recalculated the coefficient of correlation (ρ) without Amram and it was 0.959. This is virtually the same as it was with Amram in the calculation (0.956) – for practical purposes (after rounding to two significant figures)[364] these two are equal.

Freeley wrote:

> *Certainty* is associated with absolute truth. … Few matters of human affairs are subject to proof as certainty. Most of the advocates' efforts are in the realm of probability; they seek to demonstrate that their conclusions have a degree of credibility warranting acceptance. In criminal courts, which demand the highest standard of proof, all elements of the case must be proved beyond a reasonable doubt. This has been estimated to be over 90 percent certainty. (p. 141)

The coefficients of correlation in this instance and in other instances – cited in this chapter exceed 90 percent – beyond a reasonable doubt.

The assumptions in the dates of the births of Levi, Kohath, Amram, and Joshua have no effect on the dating of either the

[364] Because some of the data used in the calculations was only precise to two significant figures – the final answer should be rounded to two significant figures. Therefore, ρ = 0.96.

flood or the creation in this treatise.

The Masoretic Text Versus the LXX

It is evident that there is a textual problem here. Which of these two texts has the correct ages for the patriarchs (Arpachshad, Shelah, Eber, Peleg, Reu, Serug, and Nahor) when their son was born (Gen. 11:12-25)?

Since there are no textual variations of any consequence in Lk. 3:36 with regard to Cainan (there is a difference in the spelling of Cainan [Καϊνὰμ versus Καϊνὰν]) in some MSS. Only two manuscripts (p^{75vid} and D) omit Cainan.[365] Since there is no good reason to reject Luke's record of Cainan being in the genealogy we must accept the fact that the Masoretic Text is corrupted in this regard. We have three independent sources (Appendix B) that all give us the same ages as the LXX for when the sons were born: (1) the LXX, (2) the Samaritan Pentateuch, and (3) Josephus (who appears to claim that his source is the Hebrew text). Steinmann claims that Cainan is an insertion. He argues:

> *The Masoretic Text*. MT clearly has precursors dating back to at least 200 BC, as demonstrated by the ancient texts from Qumran. They testify to the relative stability of the tradition that culminated in the MT. There is no evidence to suggest that the MT of Genesis ought not on the whole be viewed as an early witness to a particular recension of the Hebrew text of this book. (p. 698)

Steinmann's basic argument is:

> First Premise: If the Qumran text is essentially the same as the Masoretic Text, then *The Masoretic Text* is not corrupt in any way.
>
> Second Premise: The Qumran text is essentially the same as *The Masoretic Text*. (It does not contain this genealogy.)
>
> Conclusion: *The Masoretic Text* is not corrupt in any way.

This argument contains the logical *fallacy of composition*. (This fallacy is committed when a person argues that what is true of the individual is true of the whole.) The Jews did not

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[365] These are the only MSS than have neither Καϊνὰμ nor Καϊνὰν.

have a reason to corrupt *The Masoretic Text* in other places, like they had with the genealogy. This corruption of *The Masoretic Text* genealogy enabled them to reply to the argument of Hebrews 7-8 (cf. Donnelly).

The Samaritan Pentateuch was not likely to have been corrupted by the LXX because the Jews had no dealings with the Samaritans (Jn. 4:9). The Samaritan Pentateuch can probably be traced back to a time before the Babylonian captivity because it is in the Phoenician script. (The Jews changed the Hebrew from the Phoenician script to Aramaic script during the Babylonian captivity.)

The most reasonable explanation for these three sources all having the same readings is that it is the correct reading.

The most likely reason for the corruption of the Masoretic text of Gen. 11:12-25 is that this gave the Jews a possible answer to the usage of Psalm 110:4 by the New Testament. The Jews have argued that Melchizedek was Shem. There is no evidence that the Jews made this claim until sometime after the book of Hebrews was written. This point is discussed in some great detail by Donnelly. Abraham and Shem were not contemporaries according to the timeline of the LXX but were contemporaries according to the timeline of the Masoretic text. It seems likely that the Jews corrupted the text of the Hebrew Old Testament in order to reply to arguments made by the writers of the New Testament. A Jew named Acquila (not the same man of Acts 18), made a new translation of the LXX (circa A.D. 140) that was more favorable to the unbelieving Jews – this shows that certain Jews were dishonest.

There is another reason to claim that the LXX has the correct postdiluvian genealogy is that the LXX Text genealogy has a probability (coefficient of correlation ρ) of being correct of 0.956 and the Masoretic Text genealogy has a probability (coefficient of correlation ρ) of being correct of 0.873. When I say *probability of being correct,* I am referring to the expected logarithmic base e buildup of mutations. This also gives us confidence that there are no gaps in the postdiluvian

genealogy.

CONCLUSION

I doubt that Shem (who was born 98 years before The Flood) had very many (if any) mutations. However, he only lived 600 years – this is about 350 years less than Noah and several of the other antediluvian (preflood) patriarchs. Mutations could not be a problem for some time after the flood because these people intermarried.

It is my conclusion that at least two other major factors caused the reduced longevity of postdiluvian men. *First*, there was the reduced fertility of the soil. *Second*, there was the effects of the lowered oxygen content and the lowered barometric pressure of the atmosphere. These two help to explain the precipitous decline in longevity of Shem (600 years) when compared to the antediluvian patriarchs (Noah – 950 years, Methuselah – 969 years, etc.).

APPENDIX B

THE RECORD OF POSTDILUVIAN PATRIARCHS

Josephus Book 1, 6, 5

5. I will now treat of the Hebrews. The son of Phaleg, whose father Was Heber, was Ragau; whose son was Serug, to whom was born Nahor; his son was Terah, who was the father of Abraham, who accordingly was the tenth from Noah, and was born in the two hundred and ninety-second year after the deluge; for Terah begat Abram in his seventieth year. Nahor begat Haran when he was one hundred and twenty years old; Nahor was born to Serug in his hundred and thirty-second year; Ragau had Serug at one hundred and thirty; at the same age also Phaleg had Ragau; Heber begat Phaleg in his hundred and thirty-fourth year; he himself being begotten by Sala when he was a hundred and thirty years old, whom Arphaxad had for his son at the hundred and thirty-fifth year of his age. Arphaxad was the son of Shem, and born twelve years after the deluge. Now Abram had two brethren, Nahor and Haran: of these Haran left a son, Lot; as also Sarai and Milcha his daughters; and died among the Chaldeans, in a city of the Chaldeans, called Ur; and his monument is shown to this day. These married their nieces. Nabor married Milcha, and Abram married Sarai.

The Samaritan Pentateuch

Genesis 11

1 And the whole earth was of one language, and of one speech. 2 And it came to pass, as they journeyed from the east, that they found a plain in the land of Shinar; and they dwelt there. 3 And they said one to another, Go to, let us make brick, and burn them thoroughly. And they had brick for stone, and slime had they for mortar. 4 And they said, Go to, let us build us a city and a tower, whose top *may reach* unto heaven; and let us make us a name,

lest we be scattered abroad upon the face of the whole earth. 5 And the LORD came down to see the city and the tower, which the children of men builded. 6 And the LORD said, Behold, the people *is* one, and they have all one language; and this they begin to do: and now nothing will be restrained from them, which they have imagined to do. 7 Go to, let us go down, and there confound their language, that they may not understand one another's speech. 8 So the LORD scattered them abroad from thence upon the face of all the earth: and they left off to build the city and the tower. 9 Therefore is the name of it called Babel; because the LORD did there confound the language of all the earth: and from thence did the LORD scatter them abroad upon the face of all the earth. 10 These *are* the generations of Shem: Shem *was* an hundred years old, and begat Arphaxad two years after the flood: 11 And Shem lived after he begat Arphaxad five hundred years, and begat sons and daughters. And they were all days of Shem six hundred years and he is dying. 12 And Arphaxad lived five and thirty and one hundred years, and begat Salah: 13 And Arphaxad lived after he begat Salah three hundred and three years, and begat sons and daughters. And they were all days of Arphaxad eight and thirty years and four hundred years and he is dying. 14 And lived Salah thirty years and one hundred years, and begat Eber: 15 And Salah lived after he begat Eber three hundred and three years, and begat sons and daughters. And they were all days of Salah three and thirty years and four hundred years, and he is dying. 16 And Eber lived four and thirty and hundred years, and begat Peleg: 17 And Eber lived after he begat Peleg two hundred and seventy years, and begat sons and daughters. And they were all days of Eber four years and four hundred years, and he is dying. 18 And Peleg lived thirty years and hundred years, and begat Reu: 19 And Peleg lived after he begat Reu hundred and nine years, and begat sons and daughters. And they were all days of Peleg nine and thirty and two hundred years, and he is dying. 20 And Reu lived two and thirty and hundred years, and begat Serug: 21 And Reu

lived after he begat Serug hundred and seven years, and begat sons and daughters. And they were all days of Reu nine and thirty and two hundred years, and he is dying. 22 And Serug lived hundred and thirty years, and begat Nahor: 23 And Serug lived after he begat Nahor hundred years, and begat sons and daughters. And they were all days of Serug thirty years and two hundred years, and he is dying. 24 And Nahor lived nine and seventy years, and begat Terah: 25 And Nahor lived after he begat Terah an sixty and nine years, and begat sons and daughters. And they were all days of Nahor eight and forty years and hundred years, and he is dying 26 And Terah lived seventy years, and begat Abram, Nahor, and Haran. 27 Now these *are* the generations of Terah: Terah begat Abram, Nahor, and Haran; and Haran begat Lot. 28 And Haran died before his father Terah in the land of his nativity, in Ur of the Chaldees. 29 And Abram and Nahor took them wives: the name of Abram's wife *was* Sarai; and the name of Nahor's wife, Milcah, the daughter of Haran, the father of Milcah, and the father of Iscah. 30 But Sarai was barren; she *had* no child. 31 And Terah took Abram his son, and Lot the son of Haran his son's son, and Sarai and Milka his daughters-in-law, his son Abram's wife; and Nahor – his son; and he went forth with them from Ur of the Chaldees, to go into the land of Canaan; and they came unto Haran, and dwelt there. 32 And the days of Terah were hundred and forty five years: and Terah died in Haran.

The Septuagint (LXX)

Genesis 11

10 And these the generations of Sem: and Sem was a hundred years old when he begot Arphaxad, the second year after the flood. **11** And Sem lived, after he had begotten Arphaxad, five hundred years, and begot sons and daughters, and died. **12** And Arphaxad lived a hundred and thirty-five years, and begot Cainan. **13** And Arphaxad lived after he had

begotten Cainan, four hundred years, and begot sons and daughters, and died. And Cainan lived a hundred and thirty years and begot Sala; and Canaan lived after he had begotten Sala, three hundred and thirty years, and begot sons and daughters, and died. **14** And Sala lived an hundred and thirty years, and begot Heber. **15** And Sala lived after he had begotten Heber, three hundred and thirty years, and begot sons and daughters, and died. **16** And Heber lived an hundred and thirty-four years, and begot Phaleg. **17** And Heber lived after he had begotten Phaleg two hundred and seventy years, and begot sons and daughters, and died. **18** And Phaleg lived and hundred and thirty years, and begot Ragau. **19** And Phaleg lived after he had begotten Ragau, two hundred and nine years, and begot sons and daughters, and died. **20** And Ragau lived and hundred thirty and two years, and begot Seruch. **21** And Raau lived after he had begotten Seruch, two hundred and seven years, and begot sons and daughters, and died. **22** And Seruch lived a hundred and thirty years, and begot Nachor. **23** And Seruch lived after he had begotten Nachor, two hundred years, and begot sons and daughters, and died. **24** And Nachor lived a hundred and seventy-nine years, and begot Tharrha. **25** And Nachor lived after he had begotten Tharrha, an hundred and twenty-five years, and begot sons and daughters, and he died. **26** And Tharrha lived seventy years, and begot Abram, and Nachor, and Arrhan. **27** And these the generations of Tharrha. Tharrha begot Abram and Nachor, and Arrhan; and Arrhan begot Lot. **28** And Arrhan died in the presence of Tharrha his father, in the land in which he was born, in the country of the Chaldees. **29** And Abram and Nachor took to themselves wives, the name of the wife of Abram was Sara, and the name of the wife of Nachor, Malcha, daughter of Arrhan, and he was the father of Malcha, the father of Jescha. **30** And Sara was barren, and did not bear children. **31** And Tharrha took Abram his son, and Lot the son Arrhan, the son of his son, and Sara his daughter-in-law, the wife of Abram his son, and led them forth out of the land of the Chaldees, to go into the land of Chanaan, and they came as far as Charrhan, and he dwelt there. **32** And all the

days of Tharrha in the land of Charrhan were two hundred and five years, and Tharrha died in Charrhan.

APPENDIX C

INFORMATION ABOUT WOODEN SHIP-BUILDING

Skeptics and Wooden Ship-building

Several skeptics (AAOEC) have made the claim that it is not possible to build a seaworthy wooden ship that is 450 feet long. They have cited several sources who supposedly support their claims. We will consider these claims in this appendix. (All footnotes [except one] in this appendix are comments by Marion R. Fox.)

Information About Wooden Ship-building

Usher wrote:

> The increase in the size of the merchant vessels in the latter half of the nineteenth century is a subject by itself. Some increase in size would have been possible without a change in materials. Wooden vessels could be built up to 4,000, and possible 5,000 tons, but with rapidly increasing cost of construction and maintenance. Serious structural difficulties would have been encountered in building very large wooden vessels, because the stems and stern-posts must need be single timbers, and there are fairly definite limits to the size of first-class timbers for these purposes.[366] The introduction of iron and steel disposed effectively of all these problems. (Usher, page 477)

Robb wrote:

> More important in the present context, Bouguer outlined the principle that underlies the analysis of the strength of ships. Wooden ships suffered from 'arching' or 'hogging'-a tendency for the ends to droop in relation to the midship portion-and Bouguer showed that the tendency arose from differences in distributions of weight and buoyancy over the portions before and abaft the middle.[367] The

[366] The antedulivian trees would most likely be much more suitable than postdiluvian trees.

[367] It is likely that God (the designer of the ark) overcame this problem

circumstances are illustrated in diagram (a_0 of figure 185; the equal and opposite forces of weight and buoyancy constitute a couple acting in the structure. To strengthen the vessel internally Bouguer proposed the fitting of a trussed girder along the centre-line plane of the ship, with tension-members of wrought iron and compression-members of wood. (Robb, page 353)

III. THE STRUCTURE OF IRON SHIPS

Robb continued:

> In broad outline there was no difference in disposition of structure between the early iron ship and the wooden ship. In both, there were transverse members-the ribs or frames-branching from the backbone, or keel, along the center-line. In both there was a skin, or shell, clothing the transverse members and making the hull watertight. There was, however, a fundamental defect in the structure of the wooden ship; it was impossible to provide end-to-end connexions. The narrow planks, or strakes, of the skin were fitted in relatively short lengths,[368] and the only approach to continuity lay in the fact that ends of planks in neighbouring strakes were kept as far apart as possible. Accordingly the structure was not about quotation.[369] It was this consideration that imposed an upper limit, in the region of 300 ft, on the length of the wooden ship; beyond such a length the excessive, with consequent difficulty in maintaining the hull watertight. The adoption of iron, and the ability to connect the ends of plates by rivets, offered the possibility of overcoming the defect of the wooden hull; but this possibility was not at once fully exploited, as may

---

with the ark (if it were a problem with the shape of the ark and antedulivian timber).

[368] This was probably due to the streamlining of the ship (causing it to be curved) – the ark did not need to be streamlined.

[369] The wooden keel also, though massive, was built in relatively short sections scarfed together, and therefore lacked stiffness. (This footnote was by Robb.)

be seen by examining the plans of the barge *Vulcan* (figure 183). (Robb, p. 355)

Robb also wrote:

> Accordingly it became common to arrange the plating of iron ships like the planking in wooden ships, namely, in strakes running fore-to-aft. There was, however, the major difference that the end-to-end fastening absent in the wooden ship was provided in the iron ship; the ends of adjacent plates in a strake were tied together by rivets. Following a practice very commonly adopted in small wooden craft, and occasionally in large wooden ships, the strakes of plating were arranged with overlapping edges (figure 186d). In small wooden craft the planks were 'clenched' together at the edges; hence the application of the terms clencher or clinker to this form of the plating. (Robb, p. 357)

Robb wrote:

> Strength equivalent to that of a wooden frame rectangular in section could be obtained from a thin iron rib lying transversely; but such a rib could not be attached to the iron shell. (Robb, p. 358)

Robb continued:

> In the wooden ship it was not possible to fit a frame in one piece from keel to gunwale, for timber of approximately the desired shape and sufficiently great length was not obtainable.[370] Accordingly a frame was composed of several timbers arranged end to end, with other similar pieces alongside, so disposed that the common ends of one succession of pieces lay between the common ends in the other succession. That manner of construction was carried over to the early iron ships. It was described, and criticized, by Scott Russell in a book published in 1865: … it was truly curious to notice the early ship-builder … most assiduously putting together short pieces of angle iron, and regularly scarfing their ends together, to form from their assemblage a single iron frame, all formed out

[370] It seems likely that antedulivian trees were taller than postdulivian trees.

of little pieces. Happily there came an end to this, for he found it easier, cheaper, and stronger, to have his frame rolled in one piece, or at most in two; … (Robb, p. 359)

Pollard and Robertson wrote:

By 1860 the difficulties of continued timber shipbuilding had become serious enough to threaten the very existence of the British shipbuilding industry. Clearly, sufficient oak to supply the navy and the merchant marine could no longer be grown in Britain: in the 1860's it was calculated that 400,000 acres of timber were needed to build the annual British output. The supply from abroad also gave cause for anxiety. A good deal of British capital had been invested in Canadian timber, which had become competitive after the Baltic duties of 1809. Vested interests in Canadian timber were sufficiently strong to prevent the repeal of timber duties from 1815 to Gladstone's budget of 1860, forcing British builders to pay exorbitant prices for Baltic timber, which they preferred. The Admiralty bought foreign timber with the intention of breaking the monopoly of James Morris, who had cornered the entire British oak supply by 1810. In 1861-1862 the emergency plantings of oak of 1810 were not yet mature, there were considerable fears at the Admiralty about the future timber supply, especially for sternposts.

Timber is of varying quality. To obviate delays in building, the best was not always used. Pieces of the proper curvature and strength had to be selected from the timber yard in a way that would allow the remainder to be useful for secondary items. The heavy stocks of wood that had to be carried, for seasoning and for selection of the various curves needed for the hull, became crippling for shipyards competing with iron. (Pollard and Robertson, p. 13)

Laing wrote:

John J. Rockwell of Rockland, one of Main's notable designers and master builders, came to the point of

saying, 'Six masters were not practical.[371] There were too long for wood construction.' He had earned a right to his opinion by creating the first of them, but he pointed out that a part of the difficulty they all eventually experienced came from the practice of allowing such long wooden structures full of coal to lie on the mud at low tide, loading or discharging. The bottom on which they rested was never level, and this 'grounding out,' in his opinion, should never have been permitted[372] in vessels more than 1,000 tons measurement. (Laing, p. 408)

[371] The weight of the masts was another factor that was problematic for wooden ships. The ark did not have sails; therefore, it did not have this problem.

[372] The ark did not have this problem, because it was (no doubt) built on suitable ground and God (providentially) caused it to end its voyage safely. Even if it were to have structural damage from the end of its first and only voyage, it was not intended to sail again.

APPENDIX D

ORGANIC MACROEVOLUTION CONSIDERED

There are two types of evolution when we are discussing the evolution of living organisms. The *first* form is *microevolution*. The *second* form is *macroevolution*. Most people do not know the difference between these two words. Even many biologists confuse these two and use them interchangeably. When they use these two words interchangeably, they are committing the logical fallacy of *equivocation*.

Microevolution: (*small-scale evolution*) the word *evolution* means *change* which certainly does occur on a small scale. God designed all organisms to have a wide range of genetic codes. This genetic code will allow the organism to adapt to a different environment. For example, animals will occasionally have offspring that are of different colors. These different colors can be helpful to the organism as camouflage. Some bears are born that are white and the white polar bears survived to breed and the brown and black polar bears did not survive in the polar regions. *Microevolution*: "comparatively minor evolutionary change involving the accumulation of variation in populations usually below the species level" (Merriam-Webster's Collegiate Dictionary, 10th ed.)

Macroevolution: (*wide-scale evolution*) the theory that one species of organism will change its characteristics and become a new species. This is the name for the commonly accepted "theory of evolution" which has all life beginning as a single cell that evolved into all other life-forms. *Macroevolution*: "evolution that results in relatively large and complex changes (as in species formation)" (Merriam-Webster's Collegiate Dictionary, 10th ed.)

Charles Darwin thought that organisms adapted to their environments and passed on those adaptations. He thought organisms did this by changing their behavior and, therefore, their bodies — like an athlete working out and getting buff

— and that those changes were passed on to offspring. In fact, Darwin confused microevolution with macroevolution. Darwin thought macroevolution occurred by the organism acquiring characteristics. The present view of macroevolution by AAOEC is through mutations. What Johnston and Selander studied (the house sparrow – *passer domesticus*) was microevolution, not macroevolution (pp. 1-28).[373] The atheist (Raup) – correctly states: "But we are not sure whether we can extrapolate this process of *microevolution* to explain the larger scale events of *macroevolution*." (p. 25)

Mathematical Probability

We will set for a series of arguments from probability for organic macroevolution, which implies that God exists. Either life exists from creation by God, or life exists from chance events (organic macroevolution). Stokes (p. 218) acknowledged this. "If we discount the theory of spontaneous generation entirely, then the only alternative is supernatural creation. There are no other possibilities." (p. 218) If we prove that the probability for organic macroevolution is essentially zero (0), then the alternative (creation by God) is the only alternative.

The probability of a series of unrelated events is determined by the following formula: $P_t = P_1 \times P_2 \times P_3 \cdots P_n$ (Alder and Roessler, p. 52). Where P_1 is the probability of the first event occurring, P_2 is the probability of the second event occurring, P_3 is the probability of the third event occurring, etc.

The probability of a single event occurring is: $P = s/(s + f)$ where s = the number of ways that an event can successfully occur and f = the number of ways an event can fail to occur (Alder and Roessler, p. 56).

The French mathematician Emile Borel developed many principles of probability. He calculated the probabilities of things happening on three different levels.

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[373] This (rapid microevolution – adaptive differentiation) explains how there were so many variations in both plants and animals since Genesis 9.

First, Borel states the probability of events which are negligible on the Human Scale: "… *one one-millionth* as a reasonable value for a negligible probability on the human scale." (p. 27). We would word this as "one chance in a million." Borel is saying that if the probability is this low, a single human will not see it occur.

Second, Borel states the probability of events which are Negligible on the Terrestrial Scale:

> … the negligible probability on the human scale must be regarded as negligible on the terrestrial scale, that is to say, a billionth of one one-millionth, or 10^{-15}, unity divided by a number of 15 figures. (p. 27)

This amounts to one chance in 1 quadrillion. By terrestrial, Borel means, on the whole Earth.

Borel states the probability of events which are Negligible on the Cosmic[374] scale:

> We may be led to set at 10^{-50} the value of negligible probabilities on the cosmic scale. When the probability of an event is below this limit, the opposite event may be expected to occur with certainty, whatever the number of occasions presenting themselves in the entire universe … A phenomenon with a probability of 10^{-50} will therefore never occur, or at least never be observed. (p. 28)

Morowitz claims that the probability that the smallest and simplest life-form could come into existence by chance alone is: 1 chance in $10^{340,000,000}$ (Morowitz, p. 99).

Carl Sagan claims that the chance for life evolving on earth is: 1 chance in $10^{2,000,000,000}$ (Sagan, p. 46).

Frank Salisbury claims that the chance for a living organism to add another functioning organ is: 1 chance in 10^{415} (Salisbury, pp. 342-343). Think about all of the different organs on the multitude of organisms that had to evolve.

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[374] In the cosmos – in the Universe.

We see the ridiculously low probability of any one of these events discussed by Morowitz, Sagan, and Salisbury is so much lower than what Borel says cannot occur on the cosmic scale that it is absurd to even contemplate that they might occur. Remembering that the chance for a series of events is calculated from the formula $P_t = P_1 \times P_2 \times P_3 \cdots P_n$ (Alder and Roessler, p. 52), we see why Morowitz and Sagan have such large numbers. With the myriads of functioning organs that had to evolve to obtain the millions of different organisms that have existed, we must multiply these (Salisbury – 10^{415}) we get the following: $Pt = 1/(10^{415} \times 10^{415} \times 10^{415} \times \cdots P_n)$. To obtain 1,000,000 functioning organs the probability = $1/10^{415,000,000}$. This equals 1 with 415 million zeros after it. I have never seen an electronic calculator that can go beyond 1×10^{99} – this is 1 with 99 zeros after it. Scientists estimate that there are only about 1×10^{80} atoms in the whole Universe.

We can add even more problems for the AAOEC – Yokey discusses the probability of spontaneous biogenesis (organic macroevolution) by information theory (pp. 377-398). He concludes that the probability of selecting one of the simplest amino acids, which is necessary for life to exist, is equal to $p = 2.1 \times 10^{-65}$.

Since there are many such amino acids necessary for life to exist the probability of coming into existence by spontaneous biogenesis is much less than this value. Remember, that we multiply each probability (Alder and Roessler, p. 52).

These all have probabilities less than what Emile Borel says cannot occur in the whole Universe (1 chance in 10^{50}).

Organic Macroevolution Requirements

In order to raise the probability of organic macroevolution, the AAOEC needs extensive amounts of time (billions[375] of years). This was recognized by Badash (p. 90).[376] Wald (p. 312) claims

[375] One billion = 1000 million.

[376] The quote of Badash is found in Chapter 2, p. 16.

that extensive amounts of time can perform the miracles of creating living organisms.[377]

Throughout this treatise I have developed arguments that prove that the Earth cannot be even millions of years old. In addition, I have given answers to the AAOEC arguments that The Cosmos (Universe) is billions of years old.

Organic macroevolution is also based upon the assumption of substantive uniformitarianism (Monastersky, 1997, p. S20).[378] Since substantive uniformitarianism has been rejected by most geologists, this poses another problem for the AAOEC.

Kemp (p. 66)[379] admits that there is an absence of intermediate fossils in the fossil record. If macroevolution occurred, there should be large numbers of intermediate (transition) fossils.

Dott and Prothero (pp. 196-197)[380] and (pp. 184-185)[381] claim the Earth's atmosphere had to be anaerobic in order for organic macroevolution to occur. Cloud agreed with Dott and Prothero (p. 397).[382] The Earth's crust contains the equivalent of "53 bars[383] of CO_2." (Hunten, p. 915) This CO_2 is in rocks that are derived from organic materials (Berner and Canfield, p. 334).[384] Berner (1993, p. 70)[385] reveals that the CO_2 in the rocks is of organic origin. If this CO_2 were in the atmosphere, it would create a runaway greenhouse effect – preventing organic macroevolution from occurring. I discussed this several times.

The advocates of *climate-change*[386] are worried about small amounts of CO_2 being added to the atmosphere – just think

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[377] The quote of Wald is found in Chapter 2, p. 17.
[378] The quote of Monastersky is found in Chapter 2, p. 22.
[379] The quote of Kemp is found in Chapter 13, p. 337.
[380] The quote of Dott and Prothero is found in Chapter 2, p. 17.
[381] The quote of Dott and Prothero is found in Chapter 13, p. 338.
[382] The quote of Cloud is found in Chapter 5, pp. 53-54.
[383] 1 bar = 14.5 lbs/in^2 ≈ 1 atm (1 atm = 14.7 lbs/in^2= 1.013×10^5 N/m^2).
[384] The quote of Berner and Canfield is found in Chapter 6, p. 80.
[385] The quote of Berner is found in Chapter 6, pp. 146-147.
[386] I have no doubt that climate-change began in Genesis 6 and continues from factors caused by the flood.

about 53 times (Hunten, p. 915) as much as we presently have being added! The carbon dioxide presently being released by the burning of oil, coal, gasoline, etc. is causing forests to grow in the northern hemisphere (cf. Ciais, *et al.*, pp. 1096-1102). The FFM has no problem with the CO_2 – it was *in situ* in the forests, grasslands, etc. at creation (Genesis 1). Another benefit from burning oil, coal, and gasoline is that fossil-fuels have very little radiocarbon ${}_6C^{14}$ in them, the carbon that is released from burning these fossil-fuels is mostly ${}_6C^{12}$ and ${}_6C^{13}$.

Certain Rules of Microevolution

There are two rules of microevolution that are evident. These rules are *Bergmann's Rule* and *Allen's Rule*. *Bergmann's Rule* is an ecogeographical rule which states that organisms of the same species are larger in size in colder regions than those of the same species in warmer regions.

Allen's Rule is an ecogeographical rule which states that the limbs, ears and other appendages of animals living in colder climates are shorter than the appendages of the animals of the same species living in warmer regions.

Grimes reports on a study at the University of Alaska (Fairbanks) that claims to falsify *Bergmann's Rule*. This study was published in the journal *Nature Communications*. The article was written by: Wilson, Lauren; Gardner, Jacob; Drukenmiller, Pat; and Organ, Chris. This study claims that dinosaurs were on the *North Slope* during times when it became extremely cold (when the dinosaur fossils formed [Prince Creek Formation]). Of course, the FFM has them on the *North Slope* in antediluvian times (when the climate was temperate on the *North Slope*). Hollingworth (p. 16), Von Egeln and Caster (pp. 491-492), and Dott and Prothero (pp. 309-310 and 414) all claim the climate was temperate at that time. These three are quoted on pp. 64-ff.

Concluding Remarks

From the probabilities (above) and many other things that must occur for life to begin by spontaneous generation (abiogenesis), it becomes absurd to even contemplate that life began by accident.

Several requirements (necessary conditions) for organic macroevolution to be true create dilemmas for organic macroevolution to occur. These points were developed in many parts of this volume.

APPENDIX E

BIAS AMONG SCIENTISTS

The myth that scientists are unbiased is widespread in our society. Several studies will be examined in this post that prove that bias is a problem, even among scientists. The following study conducted by Mitroff exposes this myth. A large number of the scientists involved in this study conducted by Mitroff were geologists, geophysicists, and geochemists.

> If the general population of Apollo 11 scientists represents an elite to begin with, then the sample is best described as an elite of elites (cf. Zukerman, 1972). It contains some of the most distinguished geologists and scientific analysts of the Apollo missions. Two of the forty-two have the Nobel prize; six are members of the National Academy of Scientists; thirty-eight have their PhD. Thirteen are major editors of key scientific journals in the field. Nearly all are at prestigious universities or a top-ranked government research lab. (Mitroff, page 584)

Twenty seven of these forty-two scientists were in the areas of geologic sciences: general geology (7), geophysics (4), and geochemistry (16). Four of them were in the areas of physics, four in astronomy, five were in chemistry, with two being in engineering. (cf. Mitroff, page 585)

Mitroff also wrote:

> In response to the opening interview questions on the relative plausibility of various scientific hypotheses associated with the moon, three scientists were overwhelmingly nominated as most attached to their own ideas. The comments referring to these scientists were peppered with emotion. The following is typical: X is so committed to the idea that the moon is Q that you could literally take the moon apart piece by piece, ship it back to Earth, reassemble it in X's backyard and shove the whole thing. … and X would still continue to believe that the moon is Q. X's belief in Q is unshakeable. He refuses to listen to reason or to evidence. I no longer regard him

as a scientist. He's so hopped up on the idea of Q that I think he's unbalanced.

… I quote from some scientists regarding the three scientists perceived as most committed to their pet hypotheses: "They have no humility …"

Every one of the scientists interviewed on the first round of interviews indicated that they thought the notion of the objective, emotionally disinterested scientist naive. The vocal and facial expressions that accompanied the verbal responses were the most revealing of all. They ranged from mild humor to guffaws to extreme annoyance and anger. They indicated that the only people who took the idea of a purely objective, emotionally disinterested scientist literally and seriously were the general public and beginning science students. Certainly no working scientist, in the words of the overwhelming majority, "believed that simple-minded nonsense." Because they actually did science and because they had to live with the day-to-day behavior of some of their more extreme colleagues, they knew better. (Mitroff, pages 586-588)

Mitroff quotes some of these unnamed scientists:

Commitment, even extreme commitment such as bias, has a role to play in science and it can serve science well. … Most of the scientists I know have theories and are looking for data to support them; they're not sorting impersonally through the data looking for a theory to fit the data. … You don't consciously falsify evidence in science but you put less priority on a piece of data that goes against you. No reputable scientist does this consciously but you do it subconsciously. … In every real scientific problem I've ever seen, the evidence by itself never settled anything because two scientists of different outlook could both take the same evidence, and reach entirely different conclusions. You eventually settle the differences, but not because of the evidence itself but because you develop a preference for one set of assumptions over the other. How you do this is not clear since there's not always a good set

of reasons for adopting one rather than the other. (Mitroff, pages 579-589)

The above study was commissioned by NASA.

Hypothesis Testing: The Role of Confirmation

Here is additional evidence that there is bias in hypothesis testing.

> A recent body of psychological research similarly suggests that prescriptive falsification rules of the sort advocated by Popper, Chamberlin, and Platt are frequently violated. Most of this research has not employed scientists as subjects; but the pervasive nature of the effects obtained, together the results of studies of scientists, indicates that many people, including scientists, manifest a bias to confirm. They do so by their failure to do one or more of the following:
>
> 1. Seek disconfirmatory evidence.
> 2. Utilize disconfirmatory evidence when it is available.
> 3. Test alternative hypotheses.
> 4. Consider whether evidence supporting a favored hypothesis supports alternative hypotheses as well.
>
> Each is a slightly different manifestation of an excessive focus on a favored hypothesis – a confirmation bias. The term "bias" is not used here in a pejorative sense. It is a descriptive term which refers to a general tendency not to give up a favored hypothesis.
>
> ...

Failure to Seek Disconfirmatory Evidence

> This is probably the most pervasive of the four manifestations of confirmation bias. A good deal of relevant experimental work has been carried out on this problem, much of it using a cognitive task developed by Peter Wason.

...

Mahoney and DeMonbreun administered the same task to psychologists, physical scientists, and Protestant ministers. They argued that the scientists, as a group, should use disconfirmation more than ministers, since scientists have been trained in the use of "critical thinking skills," presumably including the virtues of falsification, while ministers have not. The results of the study indicated, however, that the majority of subjects, including the scientists, did not seek disconfirmatory evidence and placed little value on it when it occurred.

Failure to Utilize Disconfirmatory Evidence

Even when discomfirmatory evidence is present, it is not always used. ... Geller & Pitz, (1968) summarize this research by stating '... a resistance to revising opinion following disconfirming information appears to be a general phenomenon in studies of confidence revision, probability estimation, decision making, and information buying' ... It is not the case that subjects always ignore disconfirmatory evidence.

Failure to Test Alternative Hypotheses

...

The study clearly implies that people do not test alternative hypotheses, even after being explicitly told to do so.

Failure to Evaluate Evidence in the Light of Alternative Hypotheses

Even when clear alternative hypotheses are available, subjects often fail to evaluate evidence against all possibilities. Normative behavior in certain instances is simply to describe in terms of Bayes' theorem, which specifies that the import of data that are compatible with

> one hypothesis cannot be determined independently of the extent to which the same data are compatible with other hypotheses as well.
>
> Confirmation Bias Among Scientists
>
> All of the above research suggests the existence of a general and pervasive tendency to avoid giving up a favored hypothesis. Most subjects neither sought nor utilized information so as to make disconfirmation likely. Nor did they seek or utilize information in such a way that would make acceptance of an alternative hypothesis likely. People do not behave in accordance with prescriptive falsification rules. (Wason, Peter; Johnson-Laird, P. N., pages 113-121)

The bias against religion of these experimenters is evident when we note that they hypothesized that the scientists would be able to reason better than the protestant ministers. They actually demonstrated that they had bias by their hypothesis. It is of note that the ministers did as well or better than the scientists in solving problems. cf. Mahoney and DeMonbreun.

Many scientists commit the fallacies of forgetful induction, hasty induction, and slothful induction.[387] Dishonesty among scientists was documented in Chapter Thirteen.

[387] These fallacies are discussed more thoroughly in my book: *Logic and Debate for Christians*.

GLOSSARY OF TERMS

AAOEC: Atheist, agnostic and/or old Earth creationist.

AAOECGM: Atheist, agnostic, and/or old Earth creationist geologic model.

Abiogenesis: "the origin of life from nonliving matter. *specifically* **:** a theory in the evolution of early life on earth: organic molecules and subsequent simple life forms first originated from inorganic substances" (Merriam-Webster)

Ad hoc: for the particular end or case at hand without consideration of wider application.

Albedo: the ratio of light being reflected by an object to the light falling on an object.

Amphidromic: relating to a system of tidal action in which the tide wave progresses around a point or center of little or no tide.

Anaerobic: living, active, occurring, or existing in the absence of free oxygen.

Angular momentum: a measure of rotational motion.

Anomaly: deviation from the common rule or an irregularity.

Antediluvian: of or relating to the period before the flood described in the Bible.

Anticlines: an upward opening fold of rocks.

Aphelion: the point of the orbit of a planet or comet which is farthest from the Sun.

A priori: *A priori* means "prior to experience" and empirical (the antonym of a priori [cf. p. 32]) means "based upon experience."

Argumentum ad ignorantiam: When the premises of an argument state that nothing has been proven one way or the other about something, and the conclusion then makes a definite assertion about the thing, the argument commits an **appeal to ignorance**. The issue usually involves something that is incapable of being proved or something that has not yet been proved. (P. Hurley, p. 128)

Arthropod: any of the phylum (Arthropoda) of invertebrate animals (as insects, arachnids, and crustaceans) that have a segmented body and jointed appendages.

Artifact: An object produced or shaped by human workmanship; especially, a simple tool, weapon, or ornament of archaeological or historical interest. Biology: A structure or substance not normally present, but produced by some external agency or action.

Artifactuality: Relating to an artifact.

Basalt: a fine-grained, sometimes porphyritic, intrusive-extrusive igneous rock of black or greenish-black color.

Benthic: of, relating to, or occurring at the bottom of a body of water or relating to or occurring in the depths of the ocean.

Biogenic: produced by living organisms.

Biomass: the amount of living matter (as in a unit area or volume of habitat) or plant materials and animal waste used especially as a source of fuel.

Bioturbation: the agitation and disruption of a sediment by the activities of organisms.

Bolide: a large meteor, asteroid, or a comet which impacts the Earth.

Calibrate: to standardize by determining the deviation from

a standard so as to ascertain the proper correction factors.

Carboniferous period: a late period in the Paleozoic era of uniformitarian geology in which the coal beds were formed.

Cellulose: the fibrous material of plant cell walls.

Centrifugal force: the force that tends to impel a thing or parts of a thing outward from a center of rotation.

Chondrite: a meteoric stone characterized by the presence of chondrules.

Chondrule: a rounded granule of cosmic origin often found embedded in meteoric stones and sometimes free in marine sediments.

Coalesce: to grow together or to unite into a whole.

Correlation Coefficient: A correlation coefficient expresses the strength of a relationship between two variables. Traditionally, correlation has most often been used to express the strength of a relationship between *two sets of scores* obtained from the same subjects. However, correlation coefficients can be used to assess the strength of a relationship between any two observations that have been made on the same subjects, regardless of whether they are scores, ranks (ordered data), frequencies (categories), or any combination of these.

Since a correlation coefficient denotes the strength of relationship between two variables in a sample or set of samples, it is both possible and desirable to apply a test of significance to the coefficient, The usual null hypothesis tested is that the correlation in the population from which the sample(s) was drawn is 0. If the null hypothesis is rejected, the researcher can then accept the alternative hypothesis that the variables are correlated in the population. (Linton and Gallo, p. 18).

Cosmology: a branch of metaphysics that deals with the nature of the Universe or a theory or doctrine describing the natural order of the Universe.

Craton: Large, tectonically stable nucleus of a continent that has relatively subdued topography. Geologists claim these cratons have been relatively stable throughout geological time.

Cretaceous: The last period in uniformitarian geology in the Mesozoic era. This era was supposed to be the time when reptiles dominated, angiosperms evolved, and mammals began to diversify as they evolved.

Dendrochronology: dating by tree rings.

Devonian period: a Paleozoic era; from the system of uniformitarian geology it is the age of fishes; the first plants are said to appear (especially ferns and conifers); in addition, amphibians and insects were supposed to have evolved during this age.

Diagenesis: recombination or rearrangement of constituents (as of a chemical or mineral) resulting in a new product.

Diamagnetic: a substance that is repelled by a magnet (unlike another magnet in which the like pole is repelled and the unlike pole is attracted, a diamagnetic material is repelled by either pole).

Diapause: a period of physiologically enforced dormancy between periods of activity.

Drift: to accumulate in a mass or become piled up in heaps by wind or water.

Ecliptic: the great circle of the Earth's path around the Sun. (cf. Figure 6, page 171)

Eocene: the oldest subdivision of the Tertiary system in

uniformitarian geology.

Epeiric sea: Shallow seas that flooded continental cratons frequently through geologic time; also called *epicontinental seas* (epi – above, thus "seas or over continents"). Greek *ēpeiros* (ἤπειρος) mainland, continent + English *-ic*. ἤπειρος "*terra-firma, the land* as opp. to *the sea*, ... *a Continent* ..." (Liddell and Scott, p. 353)

Extrapolate: to infer values of a variable in an unobserved interval from values, within an already observed interval or to project, extend, or expand known data or experience into an area not known or experienced so as to arrive at a conjectural knowledge of the unknown area.

Fauna: animal life, especially the animals characteristic of a region, period, or special environment.

Faunal succession, principle of: this principle is defined in Chapter 12 (p. 292).

Feldspar: any of a group of crystalline minerals that consist of aluminum silicates with either potassium, sodium, calcium, or barium and that are an essential constituent of nearly all-crystalline rocks.

Felsite: dense, fine-grained, light-colored igneous rock which is rich in silica.

Ferro-magnetic: a material that is strongly attracted by magnets.

FFM: Fox flood model

Flora: plant or bacterial life, especially such life characteristic of a region, period, or special environment.

Glauconite: a mineral consisting of a dull green earthy iron potassium silicate occurring in greensand.

Half-life: the time that it takes for 1/2 of a quantity of radioactive substance to decay. For example, if 16 grams of a material with a half-life of 1 day is stored, after 1 day there will be 8 grams of the substance. After 2 days there will be 4 grams of the substance. After 3 days there will be 2 grams of the substance, etc.

Hermeneutics: The study of the methodological principles of interpretation of the Scriptures.

Heterogeneous: consisting of dissimilar or diverse ingredients or constituents.

Hill sphere: An astronomical body's Hill sphere is the region in which it dominates the attraction of satellites.

Hydroxyl group: the -OH group.

Hydroxyl ion: a negative ion, OH-; the cause of alkaline behavior.

Hyperoxia: elevated oxygen levels.

Hypoxia: lowered oxygen levels.

Infauna: benthic fauna living in the substrate and especially in a soft sea bottom.

In situ: "[L] In its original situation." (Thatcher et al., Foreign words and phrases section)

Igneous: **1**. of, relating to, or resembling fire: **2.** relating to, resulting from, or suggestive of the intrusion or extrusion of magma or volcanic activity; formed by solidification of magma.

Isostasy: The concept that a condition of equilibrium is present in Earth's crust so that all rock masses are in balance.

Isotopes: atoms of the same elements which have the same atomic numbers and chemical properties, but different atomic

masses and molecular weights.

Jovian: of, relating to, or characteristic of the planet Jupiter (The Jovian planets include: Jupiter, Saturn, Uranus, and Neptune).

Kerogen: bituminous material occurring in shale and yielding oil when heated.

Kinetic energy: since energy is conserved, force is the measure of the change and energy is the measure of the change. The change in the energy of a system is a measure of the physical change of the system. Kinetic energy is the energy associated with motion.

K-T: The abbreviation of the Cretaceous and Tertiary (periods of time in the uniformitarian geologic scheme).

Lithology: the descriptive macroscopic study of rocks, including their structure, grain size, stratification, and mineral composition.

Lithosphere: the solid part of a celestial body (as the Earth); specifically, the outer part of the solid Earth composed of rock essentially like that exposed at the surface.

Macro: of, involving, or intended for use with relatively large quantities or on a large scale.

Macroevolution: (*wide-scale evolution*) the theory that one species of organism will change its characteristics and become a new species. This is the name for the commonly accepted "theory of evolution" which has all life beginning as a single cell that evolved into all other life-forms. "evolution that results in relatively large and complex changes (as in species formation)" (Merriam-Webster's Collegiate Dictionary, 10th ed.)

Magma: An extremely hot rock material within the Earth from which igneous rock results by cooling.

Metazoan: Any of a group that comprises all animals having the body composed of cells differentiated into tissues and organs and usually a digestive cavity lined with specialized cells.

Microevolution: (*small-scale evolution*) the word "evolution" means "change" which certainly does occur on a small scale. God designed all organisms to have a wide range of genetic codes. This genetic code will allow the organism to adapt to a different environment. For example, animals will occasionally have offspring that are of different colors. These different colors can be helpful to the organism as camouflage. Some bears are born that are white and the white polar bears survived to breed and the brown and black polar bears did not survive in the polar regions. "comparatively minor evolutionary change involving the accumulation of variation in populations usually below the species level" (Merriam-Webster's Collegiate Dictionary, 10th ed.)

Neutrino: a neutral particle whose mass is thought to be zero and that travels at the speed of light.

Nummulitic limestone: is the most widely distributed and distinctive formation of the Eocene in Europe, Asia, and northern Africa.

Oblate: flattened or depressed at the poles.

Order of magnitude: a range of magnitude extending from some value to ten times that value. Two orders of magnitude is the range of magnitude extending from ten times the value to one hundred times that value.

Ordovician: In uniformitarian geology it is the period between the Cambrian and Silurian.

Orogenesis: related to the process of mountain formation, especially by folding of the Earth's crust.

Paleogene: In uniformitarian geology this is the earlier period of the Tertiary including the Paleocene, Eocene, and Oligocene.

Palaeozoic (also spelled: Paleozoic): The fourth era of the uniformitarian geologic eras. This era was supposed to have lasted for 325 million years. The first land plants, land-dwelling animals, primitive fish, woody plants, amphibians, insects, and reptiles were supposed to have evolved.

Paleomagnetism: the intensity and direction of residual magnetization in ancient rocks.

Paramagnetic: materials that are weakly attracted to magnets. If the temperature is lowered, the attraction is usually greater (particularly if the temperature is near absolute zero).

Perihelion: the point of the orbit of a planet, a comet, or an asteroid which is nearest to the Sun.

Permian: from uniformitarian geology this is a Paleozoic period which was supposed to have lasted from 200 to 180 million years ago. During this period AAOEC claim that trilobites, seed flora, and reptiles evolved.

‰: per thousand (compared with % which means per hundred).

Perturbation: **1 :** the action of perturbing **:** the state of being perturbed **2 :** a disturbance of motion, course, arrangement, or state of equilibrium *especially* **:** a disturbance of the regular and usually elliptical course of motion of a celestial body that is produced by some force additional to that which causes its regular motion (Merriam-Webster)

Phanerozic: of, relating to, or being an eon of uniformitarian geologic history that comprises the Paleozoic, Mesozoic, and Cenozoic or the corresponding system of rocks.

Plate tectonics: the geologic theory that the Earth is composed of plates which are moving on the surface of the Earth.

Pleistocene period: according to uniformitarian geology during this period the Earth was supposed to have experienced an "ice age." This period was said to have begun one to two million years ago and man was supposed to have evolved.

Porphyritic: having distinct crystals (as of feldspar) in a relatively fine-grained base.

Postdiluvian: of or relating to the period after the flood described in the Bible.

Protozoan: Any of a phylum or subkingdom (Protozoa) of chiefly motile and heterotrophic unicellular protists (as amoebas, trypanosomes, sporozoans, and parmecia) that are represented in almost every kind of habitat.

Punctuated uniformitarianism: This is the geological system where the AAOEC uses linear extrapolation between catastrophic events. In effect, they employ Lyellian assumptions between catastrophes.

Quick-freeze: "to freeze (food) for preservation so rapidly that ice crystals formed are too small to rupture the cells and the natural juices and flavor are preserved" (Merriam-Webster)

Radiometric: of or relating to the measurement of geologic time by means of the rate of disintegration of radioactive elements.

Radionuclides: a natural or artificial nuclide which exhibits radioactivity.

Remanence: retentivity; the residual magnetization of a ferro-magnetic substance when the magnetizing field is

reduced to zero.

Sialic material: material that is rich in silicon, the alkalies, and aluminum. Sialic material has a low density when compared with simatic material. The continents are composed mostly of sialic material.

Simatic material: material rich in iron and magnesium. Simatic material has a greater density than sialic material. The ocean basins are composed mostly of simatic material.

Solar wind: the movement of ionized particles, mostly helium and hydrogen, from the Sun through the solar system with velocities of 300-1,000 kilometers per second (186-622 miles per second).

Superposition, law of: this law is defined in Chapter 13.

Till: unstratified glacial drift consisting of clay, sand, gravel, and boulders intermingled.

Tonne: Metric ton = 1,000 kilograms ≈ 2,205 pounds at sea level.

Torpor: **1 a :** a state of mental and motor inactivity with partial or total insensibility **b :** a state of lowered physiological activity typically characterized by reduced metabolism, heart rate, respiration, and body temperature that occurs in varying degrees especially in hibernating and estivating animals (Merrriam-Webster)

Triassic period: from uniformitarian geology this period was supposed to have occurred 180 million years ago. AAOEC claim that reptiles, cycads, and conifers were dominant.

Troposphere: the lowest portion of the atmosphere that is located between the Earth and the stratosphere.

Varve: A pair of layers of alternately finer and coarser silt and clay thought to comprise an annual cycle of deposition in a

body of still water.

Ventilatory: of, relating to, or provided with ventilation.

Worldview: a comprehensive conception or apprehension of the world especially from a specific standpoint. The atheist and/or agnostic *worldview* is that the Universe either created itself or is eternal. The theistic *worldview* is that God is both omniscient, omnipresent, omnibenevolent, omnipotent, eternal, and that God created the Universe. Cf. Fox, 2024 for a more thorough discussion of some of these points.

BIBLIOGRAPHY

Aardsma, Gerald E. (1991). *Radiocarbon and the Genesis flood.* El Cajon, CA: Institute for Creation Research.

Agassiz: https://www.youtube.com/watch?v=nCBEBIBsJzM

Abraham, G.; et al. *Journal of Nutritional Medicine*. 1991, 2, pp. 165-178.

Akesson, Susanne. Effect of geomagnetic field on orientation of the marsh warbler, Acrocephalus palustris, in Sweden and Kenya." *Animal Behaviour.* Vol. 46 # 6, December 1993, pp. 1157-1167.

Alder, Henry L.; Roessler, Edward B. (1964). *Introduction to probability and statistics.* San Francisco, CA: W. H. Freeman & Co., p. 52.

Alexander, David; Alexander, Pat. (1973). *Eerdmans' handbook to the Bible.* Grand Rapids, MI: William B. Eerdmans Publishing Co.

Allegre, Claude. (1992). *From stone to star*. Cambridge, MA: Harvard University Press.

Allegre, Claude J.; Schneider, Stephen H. "The evolution of the Earth." *Scientific American.* Vol. 271 # 10, October 1994, pp. 66-75.

Allen, Joseph Baneth; Waters, Tom. "The great northern ice sheet." *Earth.* Vol. 4 # 1, February 1995, page 12.

Alley, R. B.; Meese, D. A.; Shuman, C. A.; *et al.* "Abrupt increase in Greenland snow accumulation at the end of the Younger Dryas event." *Nature.* Vol. 362 # 6420, April 8, 1993, pp. 527-529.

Alvarez, Walter; *et al.* (1989, S. V. M. Clube, editor). *Catastrophes and evolution: Astronomical foundations.* New

York: Cambridge University Press.

Anderson, John Lynde. "Non-Poisson distributions observed during counting of certain carbon-14-labeled organic (sub)monolayers." *The Journal of Physical Chemistry*. Vol. 76 # 24, November 23, 1972, pp. 3603-3612.

Anderson, John Lynde; Spangler, George W. "Radiometric Dating: Is the 'Decay Constant' Constant?" *Pensee*. Vol. 4 # 4, Fall, 1974, pp. 31-33.

Anderson, R. *American Diabetes Association 56th Scientific Session*. June 9, 1996, San Francisco.

Anderson, R.; et al. *Diabetes*. 1996, 45(supp. 2), pp. 124A/454.

Amato, Ivan. "American family tree gets new root." *Science*. Vol. 260 # 5104, April 2, 1993, page 22.

Anonymous #1. "From agricultural wastes to feed or fuel." *Chemical and Engineering News*. May 29, 1972, pp. 14-15.

Anonymous # 2. "Striking oil in the laboratory." *Science News*. Vol. 125 # 12, March 24, 1984, page 187.

Anonymous #3. "Steamy Early Earth." *Sky & Telescope*. Vol. 81 # 4, April 1991, page 351.

Anonymous #4. "Cosmic dust and the dinosaurs." *Sky & Telescope*. Vol. 79 # 1, January 1990, page 14.

Anonymous #5. "Earth almanac section." *National Geographic Magazine*. Vol. 189 # 6, June 1996, (no page number in this section).

Anonymous #6. *Sky & Telescope*. Vol. 81 # 3, March 1991, page 245.

Anonymous #7. "Mammoth Lode of Ivory." *National Geographic*. Vol. 181 # 1, January 1992, page 148.

Anonymous #8. “How cool was the coral?” *The Economist*. December 18, 1993, pp. 77-78.

Anonymous #9. “Multiple impact on Earth by asteroid or comet string?” *Astronomy*. Vol. 24 # 4, April 1996, page 26.

Anonymous #10. “Ski Mercury!” *Sky & Telescope*. Vol. 88 # 4, October 1994, page 12.

Anonymous #11. “Geomagnetic switch: Not impact caused.” *Science News*. Vol. 137 # 10, March 10, 1990, page 158.

Anonymous #12. “What leads a termite through a magnetic field?” *New Scientist*. Vol. 71 # 1014, August 19, 1976, page 391.

Anonymous #13. “From agricultural wastes to feed or fuel.” *Chemical and Engineering News*. May 29, 1972, pp. 14-15.

Anonymous #14. “Alaskan glacier races forward.” *Science News*. Vol. 144 # 21, November 20, 1993, page 333.

Anonymous #15. “Three million’s a crowd.” *Sea Frontiers*. Vol. 41 # 1, Spring 1995, pp. 19-20.

Anonymous #16. “A new age for the Universe?” *Astronomy*. Vol. 22 # 3, March 1994, page 22.

Anonymous #17. “Natural plutonium.” *Chemical and Engineering News*. September 20, 1971, page 29.

Anonymous #18. *Sky & Telescope*. Vol. 81 # 3, March 1991, page 245.

Anonymous #19. “Iron quasars.” *Sky & Telescope*. Vol. 88 # 1, July 1994, page 14.

Anonymous (initials GBL) #20. *Physics Today*. Vol. 32 # 9, September 1979, pp. 17-19.

Anonymous #21. "Deadly ancient fires." *Sky and Telescope*, Vol. 75 # 6, December 1988, page 605

Anonymous #22. "The third Moon-crossing asteroid." *Sky & Telescope.* Vol. 88 # 1, July 1994, page 13.

Anonymous #23. "Assessing Earth impact hazards." *Astronomy.* Vol. 22 # 5, May 1994, pp. 18-20.

Anonymous #24. "Deadly ancient fires." *Sky and Telescope.* Vol. 75 # 6, December 1988, page 605

Anonymous #25. "Salty lakes hide deep in Mediterranean." *Science News.* Vol. 148 # 10, September 2, 1995, page 157.

Arp, Halton. (1974, Longair, M. S., editor). *Confrontation of cosmological theories with observational data.* (International Astronomical Union-Symposium No. 63). Boston: D. Reidel Pub. Co.

Arp, Halton. (1987). *Quasars, redshifts, and controversies.* Berkeley, CA: Interstellar Media.

Atkins, R. C. (1998). *Dr. Atkins' Vita-Nutrient Solution – Nature's answer to drugs.* New York: Simon & Schuster, p. 224.

Austin, Sam M.; Bertsch, George F. "Halo nuclei." *Scientific American.* Vol. 272 # 6, June 1995, pp. 90-95.

Badash, Lawrence. "The age-of-the Earth debate." *Scientific American*. August 1989, pp. 90-96.

Bahcall, John N.; Lande, Kenneth; *et al.* "Progress and prospects In neutrino astrophysics." *Nature.* Vol. 375 # 6526, May 4, 1995, pp. 29-34.

Bailleul, Alida M., Zheng, Wenxia, Horner, John R., Hall, Brian K., Holliday, Casey M., Schweitzer, Mary H. "Evidence

of proteins, chromosomes and chemical markers of DNA in exceptionally preserved dinosaur cartilage. *National Science Review*, Vol. 7, #4, April 2020, pp. 815-811. https://doi.org/10.1093/nsr/nwz206 For more information about dinosaur DNA cf. below.

https://pubmed.ncbi.nlm.nih.gov/34692099/

https://www.sciencedirect.com/science/article/abs/pii/S0012825221001008

Baillie, M. G. L. "Difficulties associated with any radical revision of Egyptian chronology: A reply to Bernard Newgrosh." *Journal of the Ancient Chronology Forum*. Vol. 3, 1989/90, pp. 29-36.

Bandari, Sushil; et al. "Sherpas share genetic variations with Tibetans for high-altitude adaptation." Molecular Genetics & Genomic Medicine. 2016, Nov 23; 5(1):76–84.

Barker, Stephen F. *The elements of logic, 3rd ed.* New York: McGraw-Hill, 1980.

Barrett, P. J.; Adams, C. J.; McIntosh, W. C.; Swisher, C. C. III; Wilson, G. S. "Geochronological evidence supporting Antarctic deglaciation three million years ago." *Nature*. Vol. 359, October 29, 1992, pp. 816-818.

Balkowsky, C.; Bottinelli, L; Chamaraux, P.; Gouguenheim, L.; and Heidmann, J. (1974, Longair, M. S., editor). *Confrontation of cosmological theories with observational data.* (International Astronomical Union-Symposium No. 63). Boston: D. Reidel Pub. Co.

Barnes, Earnest William (1934). *Scientific theory and religion.* New York: The Macmillan Co.

Barnes, Thomas G. (1983). *Origin and destiny of the Earth's magnetic field.* El Cajon, CA: Institute for Creation Research.

Barnes-Svarney, Partrica. "Blast from the past." *Technology*

Review. Vol. 94 # 2, February 1991, page 23.

Barrick, Reese E.; Showers, William J. "Thermophysiology of *Tyrannosaurus Rex*: Evidence from oxygen isotopes." *Science.* Vol. 265, July 8, 1994, pp. 22-224.

Bauer, Walter; Arndt, William; Gingrich, Wilbur (1957). *A Greek-English Lexicon of the New Testament and other early Christian Literature.* Chicago: The University of Chicago Press.

Beatty, J. Kelley. "New measures of the Moon." *Sky & Telescope.* Vol. 90 # 1, July 1995, pp. 32-33.

Begley, Sharon. "Gushers at 30,000 feet." *Newsweek.* Vol. 111 # 26, June 27, 1988, page 53.

Bekov, G. I.; Letokhov, V. S.; *et al.* "Rhodium distribution at the Cretaceous/Tertiary boundary analysed by ultrasensitive laser photoionization." *Nature.* Vol. 332 # 6160, March 10, 1988, pp. 146-148.

Benioff, Hugo. "Global strain accumulation and release as revealed by great earthquakes." *Bulletin of the Geological Society of America.* Vol. 62 # 4, April 1951, pp. 331-338.

Berkner, L.V.; Marshall, L.C. "On the origin and rise of oxygen concentration in the Earth's atmosphere." *Journal of the Atmospheric Sciences.* Vol. 22 # 3, May 1965, pp. 225-261.

Badash, Lawrence. "The age-of-the Earth debate." *Scientific American*. August 1989, pp. 90-96.

Berner, Robert A.; Canfield, Donald E. "A new model for atmospheric oxygen over phanerozoic time." *American Journal of Science.* Vol. 289 # 4, April 1989, pp. 333-361.

Berner, Robert A. "Drying O_2 and mass extinction." *Nature.* Vol. 340 # 235, August 24, 1989, pp. 603-604.

Berner, Robert A. "Paleozoic atmospheric CO_2: Importance of solar radiation and plant evolution." *Science*. Vol. 261 # 5117, July 2, 1993, pp. 68-70.

Berry, M. J.; et al. *Endocrine Reviews*. 1992, 13(2), pp. 207-220.

Bethell, Tom. "A challenge to Einstein." *National Review*. Vol. 42 # 21, November 5, 1990, pp. 69-71.

Beyer, Arthur F. "Some Petrified Wood from the Specimen Ridge Area of Yellowstone National Park." *The American Midland Naturalist*. Vol. 51, 1954, pp. 553-567.

Billings, Paul; Beckwith, Jonathan. "Born Gay?" *Technology Review*. Vol. 96 # 5, July 1993, pp. 60-62.

Birkeland, Peter W.; Larson, Edwin E. (1989). *Putnam's Geology*. 5th ed. New York: Oxford University Press.

Black, D. I. "Cosmic ray effects and faunal extinctions at geomagnetic field reversals." *Earth and Planetary Science Letters*. Vol. 3, 1967, pp. 225-236.

Black, Riley. "Dinosaur DNA discovered?" *Scientific American*. April, 17, 2020. https://www.scientificamerican.com/article/possible-dinosaur-dna-has-been-found/

Blanc, P.-L. (2002). "The opening of the Plio-Quaternary Gibraltar Strait: assessing the size of a cataclysm". Geodinamica Acta. 15 (5–6): 303–317.

Blanchon, Paul; Shaw, John. "Reply to article entitled 'Reef drowning during the last deglaciation: Evidence for catastrophic sea-level rise and ice-sheet collapse: Comment and reply.'" *Geology*. Vol. 23 # 10, October 1995, pp. 957-959.

Bonneville – Lake: https://www.youtube.com/watch?v=AqJweIoLLKQ

Borel, Emile (1962). *Probabilities and life.* New York: Dover Pub. Inc., p. 27.

Bourgeois, Joanne; Wiberg, Patricia; Hansen, Thor; Kauffman, Erle. "A Tsunami Deposit at the Cretaceous-Tertiary Boundary in Texas." *Science.* Vol. 241 # 4065, July 29, 1988, pp. 567-570.

Bower, Bruce. "Gene influence tied to sexual orientation." *Science News.* Vol. 141 # 1, January 4, 1992, page 6.

Boylestad, Robert L. (1997) *Introductory circuit analysis.* 8th ed, Upper Saddle River, NJ: Prentiss-Hall Inc.

Brancazio, Peter J. "What is truth? A course in science and religion." *American Journal of Physics.* Vol. 62 # 10, October, 1994, pp. 893-899.

Brichard, S.; et al. *Trends in Pharmacological Sciences*. 1995, 16(8), pp. 265-270.

Broadhurst, F. M. "Some aspects of the palaeoecology of non-marine faunas and rates of sedimentation in Lancashire Coal Measures." *The American Journal of Science.* Vol. 262, Summer 1964, pp. 858-869.

Broadhurst, Leigh. "Earth's Atmosphere: Terrestrial or Extraterrestrial?" *Astronomy.* Vol. 20 # 1, January 1992, pp. 38-45.

Broecker, Wallace. "Glacial climate in the tropics." *Science.* Vol. 272 # 5270, June 28, 1996, pp. 1902-1904.

Brouwers, Elisabeth M.; Clemens, William A.; *et al.* "Dinosaurs on the North Slope, Alaska: High latitude, latest cretaceous environments." *Science.* Vol. 237 # 4822, September 25, 1987, pp. 1608-1610.

Brown, Francis; Driver, S. R.; Briggs, Charles A. (1979). *The*

new Brown-Driver-Briggs-Gesenius Hebrew and English Lexicon. Peabody, MA: Hendrickson Publishers.

Brown, John C.; Hughes, David W. "Tunguska's comet and non-thermal ^{14}C production in the atmosphere." *Nature.* Vol. 268, August 11, 1977, pp. 512-514.

Brune, W. H.; et al. Extreme oxidant amounts produced by lightning in storm clouds. *Science.* April 29, 2021, Vol. 372 # 6543, pp. 711-715.

Bruns, Michael; Levin, Ingeborg; *et al.* "Regional sources of volcanic carbon dioxide and their influence on ^{14}C content of present-day plant material." *Radiocarbon.* Vol. 22 # 2, 1980, pp. 532-536.

Brush, Stephen G. "Finding the age of the Earth by physics or by faith?" *Journal of Geological Education*. Vol. 30, pp. 34-58.

Burbidge, Geoffrey. "Review of the book Quasars, Redshifts, and Controversies." *Sky & Telescope.* Vol. 75 # 1, January, 1988, pp. 38-43.

Burchfield, Joe D. (1990). *Lord Kelvin and the age of the Earth.* Chicago, IL: The University of Chicago Press.

Burgess, Eric. (1993). *Outpost on Apollo's Moon.* New York: Columbia University Press.

Burnham, Robert. "Venus: Planet of fire." *Astronomy*. Vol. 19 # 9, September 1991, pp. 32-41.

Butler, Robert F. (1992). *Magnetic domains to geologic terranes.* Boston, MA: Blackwell Scientific Publications.

Calomme, M.; et al. *Biological Trace Element Research*. 1997, 56, pp. 153-165.

Castellanos, et al.
https://www.sciencedirect.com/science/article/pii/S001282521

9302521

Celnikier, L. M. "Understanding the physics of meteoritic descent." *American Journal of Physics*. Vol. 63 # 6, June 1995, pp. 524-535.

Cess, Robert D. "Gauging water-vapour feedback." *Nature*. Vol. 342 # 251, December 14, 1989, pp. 736-737.

Chao, S. "The effect of lactation on ovulation and fertility." *Clin Perinatal*. March 1987, Vol. 14 (1) pp. 39-50. PMID: 3549114

Chapin, F. Stuart; Jefferies, Robert L.; *et al.* (editors - 1992). *Arctic ecosystems in a changing climate: An ecophysiological perspective*. San Diego, CA: Academic Press.

Chapman, Clark R. "Ice right under the Sun." *Nature*. Vol. 354, December 19/26, 1991, pp. 504-505.

Charlson, Robert J.; Lovelock, James E.; *et al.* "Oceanic phytoplankton, atmospheric sulphur, cloud albedo and climate." *Nature*. Vol. 326 # 6114, April 16, 1987, pp. 655-661.

Chiang, Erick. (1977, Ronald Greeley and John S. King, editors). *Volcanism of the Eastern Snake River plain, Idaho: A comparative planetary geology guidebook*. Washington, DC: Office of Planetary Geology, NASA, NASA-CR 154621.

Chinsamy, Anusuya. "The pulse of T. Rex." *Science News*. Vol. 145 # 20, May 14, 1994, page 312.

Christen, W. G.; et al. *Annals of Epidemiology*. 1996, 6, pp. 60-66.

Ciais, P.; Tans, P. P.; *et al.* "A Large Northern Hemisphere Terrestrial CO_2 Sink Indicated by the $^{13}C/C^{12}$ Ratio of Atmospheric CO_2." *Science*. Vol. 269 # 227, August 25, 1995, pp. 1096-1102.

Clancy, Edward P. (1968). *The tides.* Garden City, NY: Doubleday & Company, Inc.

Clark, L. C.; et al. *Journal of American Medical Association*. Dec. 25, 1996, 276(24), pp. 1957-1963.

Clemens, William A.; Nelms, L. Gayle. "Paleoecological implications of Alaskan terrestrial vertebrate fauna in latest Cretaceous time at high paleolatitudes." *Geology*. Vol. 21 # 6, June, 1993, pp. 503-506.

Clottes, Jean; Courtin, Jean. "Neptune's ice age gallery." *Natural History*. Vol. 102 # 4, April 1993, pp. 64-71.

Clottes, Jean; Courtin, Jean. (1996). *The cave beneath the sea: Paleolithic images at Cosquer*. Abrams.

Cloud, Preston. (1988). *Oasis in space: Earth history from the beginning*. New York: W. W. Norton and Company.

Coe, Robert S.; Prévot, Michel. "Evidence suggesting extremely rapid field variation during a geomagnetic reversal." *Earth and Planetary Science Letters*. Vol. 92, 1989, pp. 292-298.

Coffin, Harold C. "Orientation of Trees in the Yellowstone Petrified Forests." *Journal of Paleontology*. Vol. 50 # 3, May 1976, pp. 539-543.

Coffin, Harold G. "Erect floating stumps in Spirit Lake, Washington." *Geology*. Vol. 11 # 5, May 1983, pp. 298-299.

Cohen, Morris D.; Nagel, Ernest. (1934). *An introduction to logic and scientific method.* New York: Harcourt Brace and World Inc.

Cole, Henry P.; Scott, Eugenie C. "Creation-science and scientific research." *Phi Delta Kappan*. Vol. 63 # 8, April 1982, pp. 557, 558, and 574.

Collins, Lorence G. Nr38Reasons.pdf (csun.edu)

Collins, Lorence G. *Yes, Noah's Flood May Have Happened, But Not Over the Whole Earth.* http://www.csun.edu/~vcgeo005/Collins2.pdf (In this treatise, Collins admits that a flood occurred, but claims it was a local flood.)

Committee. "American Association of Physics Teachers statement on the teaching of evolution and cosmology." *American Journal of Physics*. Vol. 68, # 1, January 2000, p. 11.

Conlon, D.; et al. *Age and Aging*. 1990, 19, 212-214.

Copi, Irving M., (1978). *Introduction to Logic*. 5th ed. New York: Macmillan Pub. Co. **Note – Copi has an excellent treatment of The Scientific Method.**

Cornwall, Ian. (1970). *Ice ages, Their nature and effects.* New York: Humanities Press Inc.

Cowen, Ron. "Hubble constant: Controversy continues." *Science News*. Vol. 147 # 13, April 1, 1995, page 198.

Cowen, Ron. "The day the dinosaurs died." *Astronomy*. Vol. 24 #4, April 1996, pp. 34-41.

Cox, Allan. "Geomagnetic reversals." *Science*. Vol. 163 # 3864, January 17, 1969, pp. 237-245.

Craig, B. G. "Pingo in the Thelon Valley, Northwest Territories; Radiocarbon age and historical significance of the contained organic material." *Bulletin of the Geological Society of America.* Vol. 70 # 4, April 1959, pp. 509-511.

Cremo, Michael A. (1993). *Forbidden archeology: The hidden history of the human race*. San Diego, CA: Bhaktivedanta Institute.

Crocket James H.; Officer, Charles B.; *et al.* "Distribution of

noble metals across the Cretaceous/Tertiary boundary at Bubbio, Italy: Iridium variation as a constraint on the duration and nature of Cretaceous/Tertiary boundary events." *Geology*. Vol. 16 # 1, January 1988, pp. 77-80.

Davis, R. D. (1989, Clube, S. V. M., editor). *Catastrophes and evolution.* New York: Cambridge University Press.

Dawkins, Richard. "God's utility function." *Scientific American.* Vol. 273 # 5, November 1995, pp. 80-85.

Defant, Albert. (1958). *Ebb and flow, The tides of earth, air, and water*. Ann Arbor, MI: The University of Michigan Press.

Delaney, Jeremy S. "Lunar basalt breccia identified among Antarctic meteorites" *Nature*. Vol. 342 # 252, December 21/28 1989, pp. 889-890.

Denton, G. H.; Hendy, C. H. "Younger dryas age advance of Franz Josef Glacier in the southern Alps of New Zealand." *Science*. Vol. 264 # 5164, June 3, 1994, pp. 1434-1437.

Dessler, A. J. "The small-comet hypothesis." *Reviews of Geophysics*. Vol. 29 # 3, August 1991, pp. 355-382 and 609.

Didyk, Borys M.; Simoneit, Bernd R. T. "Hydrothermal oil of Guaymas Basin and implications for petroleum formation mechanisms." *Nature*. Vol. 342 # 245, November 2, 1989, pp. 65-69.

Dillow, Jody. "The catastrophic deep-freeze of the Beresovka mammoth." *Creation Research Society Quarterly*. Vol. 14 # 1, June, 1977, pp. 5-13.

Donnelly, Steven (2014). *The Divine Rites and Rejection of the Priest-King: Melchizedek on the Margins of Early Jewish and Christian Interpretation.* A thesis submitted in partial fulfillment of the requirements for the Supplementary PhD program The Hebrew University of Jerusalem.

Donovan, Stephen K. "Iridium anomalous no longer?" *Nature.* Vol. 326 # 6111, pp. 331-332.

Dorf, Erling. "The Petrified Forests of Yellowstone Park." *Scientific American.* Vol. 210, 1964, pp. 106-114.

Dott, Robert H. "Episodic view now replacing catastrophism." *Geotimes*. Vol. 27 # 11, November 1982, pp. 16-17.

Dott, Robert H. Jr.; Prothero, Donald R. (1994). *Evolution of the Earth*. New York: McGraw-Hill Inc.

Dort, Wakefield Jr. "Mummified seals of southern Victoria Land." *Antarctic Journal*. Vol. 6, September-October 1971, pp. 210-211.

Driscoll, Everly. "Dating the moon samples: Pitfalls and paradoxes." *Science News*. Vol. 101, January 1, 1972, pp. 12-14.

Du, Juan, et al. "The influence of water vapor absorption in the 290-350 nm region on solar radiance: Laboratory studies and model simulation." *Geophysical Research Letters*. Sept. 10, 2013.

Dudley, H. C. "Radioactivity re-examined." *Chemical and Engineering News.* April 7, 1975, page 2.

Dunbar, Carl O.; Rodgers, John. (1966). *Principles of stratigraphy*. New York: John Wiley & Sons Inc.

Dungan, D. R. (no date). *Hermeneutics.* Delight, AR: Gospel Light Publishing Co.

Dunham, David W.; Sofia, Sabatino, *et al.* "Observations of a probable change in the solar radius between 1715 and 1979." *Science.* Vol. 210 # 4475, December 12, 1980, pp. 1243-1245.

Dyer, Betsey D.; Lyalikova, Natalia N.; *et al.* "Role of microorganisms in the formation of iridium anomalies."

Geology. Vol. 17 # 11, November 1989, pp. 1036-1039.

Eardley, Armand J. "The cause of mountain building - An enigma." *American Scientist*. Vol. 45, Summer, June 1957, pp. 189-217.

Edwards, Lawrence; Beck, J. Warren; *et al.* "A large drop in atmospheric $^{14}C/^{12}C$ and reduced melting in the Younger Dryas, documented with ^{230}Th ages of corals." *Science*. Vol. 260 # 110, May 14, 1993, pp. 962-968.

Eldredge, Niles; Gould, Stephen J. (1972, Schopf, T.J.M., editor). *Models in paleobiology*. San Francisco, CA: Freeman, Cooper, and Co.

Elliot, David H.; Askin, Rosemary A.; Kyte, Frank T.; Zinsmeister, William J. "Iridium and dinocysts at the Cretaceous-Tertiary boundary on Seymour Island, Antarctica: Implications for the K-T event." *Geology*. Vol. 22 # 8, August 1994, pp. 675-678.

Emanuel, Kerry A.; Speer, Kevin; *et al.* "Hypercanes: A possible link in global extinction scenarios." *Journal of Geophysical Research*. Vol. 100 # 7, July 20, 1995, pp. 13,755-13,765.

Encrenaz, T.; Bibring, J. P.; Blanc, M. (1989). *The solar system*. New York: Springer-Verlag.

Engel, A. E. J. "Time and the Earth." *American Scientist*. Vol. 57 # 4, 1969, pp. 458-483.

Erwin, Douglas H. "The Permo-Triassic extinction." *Nature*. Vol. 367, January 20, 1994, pp. 231-236.

Evans, William C. "A gold mine of methane." *Nature*. Vol. 381 # 6578, May 9, 1996, pp. 114-115.

Ezra, H. C.; Cook, S. F. "Histology of mammoth bone." *Science*. Vol. 129 # 3347, February 20, 1959, pp. 465-466.

Fairbanks, Richard G. “A 17,000-year glacio-eustatic sea level record: influence of glacial melting rates on the Younger Dryas event and deep-ocean circulation.” *Nature*. Vol. 342 # 250, December 7, 1989, pp. 637-642.

Fairbanks, Richard G. “Flip-flop end to last ice age.” *Nature*. Vol. 362 # 6420, April 8, 1993, page 495.

Fairhall, A. W.; Young, J. A. “Radiocarbon in the environment.” *Advances in Chemistry Series*. Vol. 93, 1970, pp. 401-418.

Farley, K. A. “Cenozoic variations in the flux of Interplanetary dust recorded by ^{3}He in a deep-sea sediment.” *Nature*. Vol. 376 # 6536, July 13, 1995, pp. 153-156.

Fischetti, Mark. “There’s gas in them thar hills!” *Technology Review*. Vol. 96 # 1, January 1993, pp. 16-18.

Fitzherbert, J. C. *New Zealand Medical Journal*. July 24, 1991,p. 321.

Flannery, Tim. “The case of the missing meat eaters, Why are Australia’s carnivores particularly cold-blooded killers?” *Natural History*. Vol. 102 # 6, June 1993, pp. 40-45.

Fox, Marion R. (2024). *Logic and debate for Christians*. Oklahoma City, OK: Five F. Publishing Co.

Francis, Jane E. “Arctic Eden.” *Natural History*. Vol. 90 # 1, January 1991.

Frank, Louis A.; Sigwarth, John B.; Craven, John D. “On the influx of small comets into Earth’s upper atmosphere. Part I, Observations.” *Geophysical Research Letters*. Vol. 13, # 4, April 1986, pp. 303-306.

Frank, Louis A.; Sigwarth, John B.; Craven, John D. “On the influx of small comets into Earth’s upper atmosphere. Part II,

Interpretation." *Geophysical Research Letters*. Vol. 13, # 4, April 1986, pp. 307-310.

Frank, Louis A.; Huyghe, Patrick. *The Washington Post*. Sunday, July 13, 1997.

Frank, Louis A.; Huyghe, Patrick (1990). *The Big Splash*. Birch Lane Press – Carol Publishing Group.

Frank, Louis A.; Sigwarth, John B. *Reviews of Geophysics*, 31, 1 / February 1993 pages 1 -28 (Paper # 92RG02316)

Frankel, Richard B. "Magnetic guidance of organisms." *Annual Review of Biophysics and Bioengineering*. Vol. 13, 1984, pp. 85-103.

Freedman, W. L.; *et al.* "Distance to the Virgo Cluster galaxy M100 from Hubble Space Telescope observations of cepheids." *Nature*. Vol. 371 # 500, October 27, 1994, pp. 757-762.

Freeley, Austin J. (1990). *Argumentation and debate – Critical thinking for reasoned decision making*. Belmont, CA: Wadsworth Pub. Co.

Fritz, Gayle J. "Are the first American farmers getting younger?" *Current Anthropology*. Vol. 35 # 3, June 1994, pp. 305-309.

Fritz, Sigmund. "The albedo of the planet Earth and of clouds" *Journal of Meteorology*, Aug. 1949, Vol. 6, pp 277-282).

Fritz, William J. "Reinterpretation of the depositional environment of the Yellowstone 'fossil forests.'" *Geology*. Vol. 8 # 7, July 1980, pp. 309-313.

Fritz, William J. "Stumps transported and deposited upright by Mount St. Helens mudflows." *Geology*. Vol. 8 # 12, December 1980, pp. 586-588.

Fritz, William J. "Stratigraphic Framework of the Lamar

River Formation in Yellowstone National Park." *Northwest Geology*. Vol. 9, 1980, pp. 1-18.

Fulford, Hugh (Wendell Winkler ed., 1982). *Difficult texts of the Old Testament explained.* Hurst, TX: Winkler Publications.

Fumagalli, Matteo; et al. "Greenlandic Inuit show genetic signatures of diet and climate adaptation." *Science*. 18 Sept. 2015, Vol 349, Issue 6254, pp. 1343-1347

Funkhouser, John G.; Naughton, John J. "Radiogenic helium and argon in ultramafic inclusions from Hawaii." *Journal of Geophysical Research.* Vol. 73 # 14, July 15, 1968, pp. 4601-4607.

Gahlot, D. K.; Ratnaker, K. S. *Indian Journal of Opthalmology*. 1981, 29:4), pp. 351-353.

Gallet, Yves; Valet, Jean Pierre. "From the superchron to the microchron, Magnetic stratigraphy in deep sea sediments." *Oceanus*. Vol. 36 # 4, Winter 1993/94, pp. 99-102.

Geggel, Laura. "Remains of 90 million-year-old rainforest discovered under Antarctic ice – Fossil traces of an ancient rainforest were just unearthed in West Antarctica." *Live Science.* April 2, 2020. Https://www,livescience.com/ancient-rainforest-antartica.html

Geikie, Archibald (Sir). (1903). *Text-book of geology, Vol. I.* 4th edition, New York: Macmillan and Co.

Geriatric Consultant, March-April, 1990, p. 6.

Gesenius, William. (1974). *Hebrew and Chaldee lexicon.* Grand Rapids, MI: Wm. B. Eerdmans Publishing Co.

Ghent, W.; et al. *Canadian Journal of Surgery*. 1993, 36, pp. 453-460.

Gielow, Robert L. (2009). *Noah's Flood: Birth of the ice age.* Mobile, AL: Axiom Press.

Gignoux, Maurice. (1950). *Stratigraphic geology.* San Francisco, CA: W. H. Freeman and Company (translated by Gwendolyn G. Woodford).

Gilliland, Ronald L. "Solar radius variations over the past 265 years." *The Astrophysical Journal.* Vol. 248 # 3, September 15, 1981, pp. 1144-1155.

Giuliano AR, Palefsky JM, Goldstone S, et al. Efficacy of quadrivalent HPV vaccine against HPV Infection and disease in males. *New England Journal of Medicine.* 2011;364(5):401-411.

Gladwin, Harold S. "Dendrochronology, radiocarbon and bristlecones." *Anthropological Journal of Canada.* Vol. 14 # 4, 1976, pp. 2-7.

Glass, Billy P.; Heezen, Bruce C. "Tektites and Geomagnetic Reversals." *Scientific American.* Vol. 217 # 1, January 1967, pp. 32-38.

Gloth, F. M.; et al. *Archives of Internal Medicine.* 1991, 151: pp. 1662-1664.

Godfrey, J. C., et al., (June 1992) *Journal of International Medical Research*, 20(3): 234-46.

Gold, Thomas. "Terrestrial sources of carbon and earthquake outgassing." *Journal of Petroleum Geology*. Vol. 1, 1979, pp. 3-19.

Goldberg, Edward G. (1965, Riley, J. P.; Skirrow, G., editors). *Chemical oceanography.* Vol. I, New York: Academic Press.

Gould, James L. "Birds lost in the red." *Nature.* Vol. 364, August 5, 1993, pp. 491-492.

Gould, Stephen Jay. "Is uniformitarianism necessary?" *American Journal of Science*. Vol. 263 # 3, March 1965, pp. 223-228.

Gould, Stephen Jay. (1984, Ashley Montagu, editor). *Science and creationism*. New York: Oxford University Press.

Grady, Denise. "Doctors doctor data." *Discover*. Vol. 16 # 1, January 1995, page 104.

Graham, Jeffrey B. "Ecological and evolutionary aspects of integumentary respiration: body size, diffusion, and the invertebrata." *American Zoologist*. Vol. 28, 1988, pp. 1031-1045.

Graham, Jeffrey B.; Dudley, Robert; Aguilar, Nancy M.; Gans, Carl. "Implications of the late Palaeozoic oxygen pulse for physiology and evolution." *Nature*. Vol. 375, May 11, 1995, pp. 117-120.

Grand Canyon Spillover Theory:
https://www.youtube.com/watch?v=t9p8fpMjp7E

Greshko, Michael. "Hints of fossil DNA discovered in dinosaur skull." *National Geographic*. March 3, 2020.
https://www.nationalgeographic.com/science/2020/03/hints-of-dna-discovered-in-a-dinosaur-fossil/

Gribbin, John R.; Lamb, H. H. (1978). *Climatic change*. Cambridge: Cambridge University Press.

Gribbin, John. "Famous for 14 minutes, 49 seconds." *New Scientist*. Vol. 137 # 1864, March 13, 1993, pp. 41-44.

Gribbin, John. "Sun throws up new neutrino riddle." *New Scientist*. Vol. 143 # 1932, July 2, 1994, page 14.

Grimes, Marmain. "Dinosaur study challenges Bergmann's Rule." *UAF News and Information*. April 5, 2024.

Guest, J. E.; Greeley, R. (1977). *Geology on the Moon.* New York: Crane, Sussak & Company, Inc.

Gulson-Castillo, Eric R.; et al. Space weather disrupts nocturnal bird navigation. *Proceedings of National Academy of Sciences*. Vol. 120 #42, October 9, 2023.

Guthrie, Russel D. "Re-creating a vanished world." *National Geographic Magazine.* Vol. 141 # 3, March 1972, pp. 294-301.

Guvenc, H.; et al. *Pediatrics*. 1995, 95(6), pp. 879-882.

Hamilton, David P. "Scholars flock to a proliferation of fraud conferences." *Science.* Vol. 251 # 993, February 1, 1991, page 507.

Hammarlund, Christer. (1994, Kindwall, Eric P., editor). *Hyperbaric medicine practice.* Flagstaff, AZ: Best Publications.

Hanson, Jeanne K. "Oceans of fire: The Earth's newest place may show how life appeared billions of years ago." *Omni.* Vol. 14 # 3, December 1991, page 18.

Hapgood, Charles H. "The mystery of the frozen mammoths." *Coronet.* September 1960, pp. 71-76.

Hapgood, Charles H. (1970). *The path of the pole.* Philadelphia, PA: Chilton Book Co.

Harden, J. W. (1995) *International Journal of Immunopharmacology*, 17: 697-701.

Hariri S, Unger ER, Sternberg M, et al. Prevalence of genital human papillomavirus among females in the United States, the National Health and Nutrition Examination Survey, 2003–2006. *Journal of Infectious Diseases*. 2011;204(4):566-573.

Harmon, J. K.; Slade, M. A.; Velez, R. A.; Crespo, A; Dryer, M.

J.; Johnson, J. M. "Radar mapping of Mercury's polar anomalies." *Nature.* Vol. 369 Issue 6477, May 19, 1994, pp. 213-215.

Harrell, R. (1973). *Effect of Added Thiamin on Learning*. New York: AMS Press.

Harris, Jason, B.; et al. *Infection and Immunity*. Nov. 2005, 73(11), pp. 7422-7427.

Harris, Norman C.; Hemmerling, Edwin M.; Mallmann, James A. (1990). *Physics principles and applications.* 5th edition, New York: Gregg Division McGraw-Hill Publishing Company.

Hartmann, Dennis L. (1994). *Global physical climatology*. San Diego, CA: Academic Press Inc.

Hartmann, William K. "Cratering in the solar system." *Scientific American.* Vol. 254 # 1, January 1977, pp. 84-99.

Hayatsu, A. "K-Ar isochron age of the North Mountain Basalt, Nova Scotia." *Canadian Journal of Earth Sciences*. Vol. 16, 1979, pp. 973-975.

Hecht, Jeff. "Geologists challenge asteroid theory of extinctions." *New Scientist.* Vol. 126 # 1718, May 26, 1990, page 31.

Hecht, Jeff. "Last gasp for the dinosaurs." *New Scientist.* Vol. 140, Issue 1898, November 6, 1993, page 11.

Hecht, Jeff. "Machine gun cratering scarred the Moon." *New scientist.* Vol. 142 # 1922, April 23, 1994, pp. 16-17.

Hedges, Robert. "Radiocarbon dating and archaeology." *Nature.* Vol. 293, October 29, 1981, pp. 700-701.

Hibben, Frank C. (1968). *The lost Americans.* New York: Thomas Y. Crowell Co.

Hill, D. H.; Boynton, W. V.; Haag, R. A. "A lunar meteorite found outside the Antarctic." *Nature.* Vol. 352, August 15, 1991, pp. 614-616

Hodgman, Charles D.; Weast, Robert C.; Selby, Samuel M. (1959). *Handbook of chemistry and Physics.* 41st ed. Cleveland, OH: Chemical Rubber Publishing Co.

Hoffecker, John F.; Powers, W. Roger; Goebel, Ted. "The colonization of Beringia and the peopling of the New World." *Science.* Vol. 259 # 5091, January 1, 1993, pp. 46-53.

Hoffman, Michelle. "Yeast Biology Enters A Surprising New Phase." *Science.* Vol. 255 # 5051, March 20, 1992, pp. 1510-1511.

Holden, Constance. "Arctic ice sheet?" *Science.* Vol. 265 # 5173, August 5, 1994, page 735.

Hollingworth, Sydney E. "The climatic factor in the geological record." *The Quarterly Journal of the Geological Society of London.* Vol. 118, March 1962, pp. 1-21.

Holmes, Arthur. (1965). *Principles of physical geology.* New York: The Ronald Press Company.

Holser, William T.; *et al.* "A unique geochemical record at the Permian/Triassic boundary." *Nature.* Vol. 337 # 6202, January 5, 1989, pp. 39-44.

Holt, L. Emmett Jr.; McIntosh, Rustin. (1953). *Holt Pediatrics, 12th ed.* New York: Appleton-Century-Crofts, Inc.

Hong, S. W., et al. Korean and English in the *Proceedings of the International Conference on Creation Research*, Korea Association of Creation Research, Taejon, 1993, pp. 105–137. https://creation.com/safety-investigation-of-noahs-ark-in-a-seaway

Horgan, John. "Gay Genes, Revisited" *Scientific American.* Vol. 273 # 5, November 1995, page 26.

Hostetler, S. W; *et al.* "Lake-atmosphere feedbacks associated with paleolakes Bonneville and Lahontan." *Science.* Vol. 263 # 5147, February 4, 1994, pp. 665-668.

Hsü, Kenneth J. "Terrestrial catastrophe caused by cometary impact at the end of Cretaceous." *Nature.* Vol. 285, May 22, 1980, pp. 201-203.

Hsü, Kenneth J. (1983). *The Mediterranean was a desert: A voyage of Glomar Challenger.* Princeton, NJ: Princeton University Press.

Hu, Y. *Biological Trace Element Research*. 1997, 56, pp. 331-342.

Hughes, Patrick. "Children of the cold." *Weatherwise.* Vol. 46 # 6, December 1993/January 1994, pp. 10-17.

Humphreys, D. Russell. (1994). *Starlight and time.* Green Forest, AR: Master Books.

Hunt, C.; et al. *American Journal of Clinical Nutrition*. 1997, 65, pp. 803-813.

Hunten, Donald M. "Atmospheric evolution of the terrestrial planets." *Science.* Vol. 259 # 5097, February 12, 1993, pp. 915-920.

Hurley, Neil F.; Van der Voo, Rob. "Magnetostratigraphy, Late Devonian iridium anomaly, and impact hypotheses." *Geology.* Vol. 18 # 4, April 1990, pp. 291-294.

Hurley, Patrick J. (1991). *A Concise Introduction to Logic*. 4th ed. Belmont, CA: Wadsworth Pub. Co.

Hut, P.; Alvarez, W. P.; Elder, T.; Hansen, E. G.; *et al.* "Comet showers as a cause of mass extinctions." *Nature.* Vol. 329,

September 10, 1987, page 118.

Ingalls, Albert G. "The Carboniferous mystery." *Scientific American.* Vol. 162 # 1, January 1940, page 14.

Isaac, Stephen; Michael, William B. (1985). *Handbook in research and evaluation.* San Diego, CA: EdITS Publishers.

Isbell, Douglas; Murrill, Mary Beth. "Galileo spacecraft makes new discoveries at Ganymede." *NASA.* ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1996/96-133.txt (July 10, 1996).

Izokh, E. P. "Origin of tektites: an alternative to terrestrial impact theory" *Chemie der Erde: Beitrage zur chemischen Mineraloge, Petrographie und Geologie*. 1996:56:458-74.

Jacoby, George H. "Hubble constant the Universe in crisis." *Nature.* Vol. 371, October 27, 1994, pp. 741-742.

Jacques, p.; et al. *American Journal of Clinical Nutrition.* 1991, 53, pp. 352S-355S.

Jaffe, Bernard. (1935). *Outposts of science.* Bernard Jaffe (Simon and Schuster, Pub.).

James, William H. "Fraud and hoaxes in science." *Nature.* Vol. 377 # 6549, October 12, 1995, page 474.

Jenkins, J. M. et al. Prodigious amounts of hydrogen oxides generated by corona discharges on tree leaves. *JGR Atmospheres,* Vol. 127, #116, pp.

Johnston, Richard F.; Selander, Robert K. "Evolution in the house sparrow. II. Adaptive differentiation in North American populations." *Evolution.* Vol. 25 # 1, March 1971, pp. 1-28. https://www.jstor.org/stable/2406496

Joos, Fortunat. "Imbalance in the budget." *Nature.* Vol. 370, July 21, 1994, pp. 181-182.

Josephus, Flavius. *The Complete Works of Flavius Josephus.* Grand Rapids, MI: Kregel Publications, 1973.

Judson, Sheldon. "Erosion of the Land, or What's happening to our continents?" *American Scientist*. Vol. 56 # 4, 1968, pp. 356-374.

Jueneman, Frederic B. "Secular catastrophism." *Industrial Research and Development.* June 1982, page 21.

Kahn, Peter G.; Pompea, Stephen M. "Nautiloid growth rhythms and dynamical evolution of the Earth-Moon system." *Nature*. Vol. 275, October 19, 1978, pp. 606-611.

Kang, C. H.; Nelson, Ethel, R. (1979). *The discovery of Genesis: How the truths of Genesis were found hidden in the Chinese language.* St. Louis, MO: Concordia Publishing House.

Kant, Immanuel (as quoted by: Medawar, Peter Brian, 1984). *The Limits of Science*. New York: Harper & Row Pub.

Kaula, William M.; Harris, Alan W. "Dynamics of lunar origin and orbital evolution." *Reviews of Geophysics and Space Physics.* Vol. 13, 1975, pp. 363-371.

Kay, Marshall; Colbert, Edwin H. (1965). *Stratigraphy and life history.* New York: John Wiley & Sons, Inc.

Keil, C. F.; Delitzsch, F. *Commentary on the Old Testament.* Vol. I, Grand Rapids, MI; William B. Eerdmans Pub. Co.

Keil, C. F.; Delitzsch, F. (1978) *Commentary on the Old Testament, The Pentateuch*. Grand Rapids, MI: William B. Eerdmans Pub. Co.

Keith, M. L.; Anderson, G. M. "Radiocarbon dating: Fictitious results from mollusk shells." *Science.* Vol. 141, August 16, 1963, pp. 634-636.

Keller, P. K.; Aronson, R. S. *Progress in Cardiovascular Diseases*. May-June, 1990, 32(6), pp. 433-448.

Kelley, Deborah S. "Methane-rich fluids in the oceanic crust." *Journal of Geophysical Research*. Vol. 101 # B2, February 10, 1996, pp. 2943-2962.

Kemp, Tom. "A fresh look at the fossil record." *New Scientist.* Vol. 108, December 5, 1985, pp. 66-67.

Kennedy, George C. "The origin of continents, mountain ranges, and ocean basins." *American Scientist.* Vol. 47, December 1959, pp. 491-504.

Kern, James A. "Dragon lizards of Komodo." *National Geographic Magazine.* December 1968, pp. 872-880.

Kerr, Richard A. "In search of elusive little comets." *Science.* Vol. 240 # 858, June 10, 1988, pp. 1403-1404.

Kerr, Richard A. "Impact-geomagnetic reversal link rejected." *Science.* Vol. 247 # 4945, February 23, 1990, page 916.

Kerr, Richard A. "When a radical experiment goes bust." *Science.* Vol. 247 # 947, March 9, 1990, pp. 1177-1179.

Kerr, Richard A. "Origins and extinctions: Paleontology in Chicago." *Science.* Vol. 257 # 69, July 24, 1992, pp. 486-487.

Kerr, Richard A. "How ice age climate got the shakes." *Science.* Vol. 260 # , May 14, 1993, pp. 890-892.

Kerr, Richard A. "A bigger death knell for the dinosaurs?" *Science.* Vol. 261 # 128, September 17, 1993, pp. 1518-1519.

Kerr, Richard A. "Ice bubbles confirm big chill." *Science.* Vol. 272 # 5268, June 14, 1996, pp. 1584-1585.

Kerr, Richard A. "Earth's core spins at its own rate." *Science.* Vol. 273 # 5274, July 26, 1996, pp. 428-429.

Kerr, Richard A. “Spots confirmed, Tiny comets spurned.” *Science*. Vol. 276 # 5317, May 30, 1997, pp. 1333-1334.

Kerr, Richard A. “Rising Damp From Small Comets?” *Science.* Vol. 277 # 5329, August 22, 1997, page 1033.

Kerr, Richard A. “The Chandler Wobble.” *Science.* Vol. 289, Aug. 4, 2000, p. 710.

Kerr, I. A.; Prideaux, G. J. (2022). “A new genus of kangaroo (marsupialia, Macropodidae) from the late Pleistoceneof Papua New Guinea.” *Transactions of the Royal Society of SouthAustralia*., pp., 1-24.

King, John S. (1977, Ronald Greeley and John S. King editors). *Volcanism of the Eastern Snake River plain, Idaho: A comparative planetary geology guidebook.* Washington, DC: Office of Planetary Geology, NASA, NASA-CR 154621.

Kitcher, Philip. (1982) *Abusing science, The case against creationism.* Cambridge, MA: The MIT Press.

Kittel, Gerhard (editor, 1967). *Theological dictionary of the New Testament, Vol. IV*. Grand Rapids, MI: Wm. B. Eerdman’s Pub. Co.

Klages, Johann P.; Salzmann, Ulrich; et al. “Temperate rainforests near the South Pole during peak Cretaceous warmth.” *Nature*. April 1, 2020 – online edition.

Kluger, Jeffrey. “The Moon at last.” *Discover.* Vol. 16 # 1, January 1995, pp. 92-93.

Krebs, Paula V. “Dendrochronology of bristlecone pine (*pinus aristata engelm*.) in Colorado.” *Arctic and Alpine Research.* Vol. 5 # 2, 1973, pp. 149-150.

Kreichgauer, Damian. (1926). *Die aequatorfrage in der geologie.* 2nd edition, Steyl, Haldenkirche (as cited by

Hapgood).

Krewski, Daniel; Yokel, Robert A.; et al. Human health risk assessment for aluminum, aluminum oxide, and aluminum hydroxide. *Journal of Toxicology and Environmental Health B Crit Rev. 2007, 10 Suppl (Suppl 1)*: 1-269.

Krumbein, W. C.; Sloss, L. L. (1963). *Stratigraphy and sedimentation*. San Francisco, CA: W. H. Freeman and Co.

Kummorow, F. *Journal of the American College of Nutrition*. 1993; 12: 12-13.

Laing, Alexander. (1971). *American Ships*. New York: American Heritage Press.

LaMarche, V. C. Jr.; Harlan, T. P. "Accuracy of tree-ring Dating of Bristlecone Pine for Calibration of the Radiocarbon Time Scale." *Journal of Geophysical Research.* Vol. 78 # 36, December 20, 1973, pp. 8849-8858.

Larsen, John. "From lignin to coal in a year." *Nature*. Vol. 314, March 28, 1985, page 316.

Lasken, Jesse E. "The radiocarbon evidence from Thera: An alternative interpretation." *Journal of the Ancient Chronology Forum*. Vol. 5, 1991/1992, pp. 68-76.

Lefavi, R.; et al. *Nutrition Report*. July, 1991, p. 53.

Lee, Jeffrey A., (2000). *The scientific endeavor. A primer on scientific principles and practice*. New York: Addison Wesley Longman, Inc.

Lehninger, Albert L. (1975). *Biochemistry: The molecular basis of cell structure and function.* 2nd ed. New York: Worth Publishers Inc.

Lemonick, Michael D. "One big, bad iceberg." *Time.* Vol. 145 # 11, March 20, 1995, page 65.

Lescinsky, D. T.; Sisson, T. W. "Ridge-forming, ice-bounded lava flows at Mount Rainier, Washington." *Geology*. Vol. 26 # 4, pp. 351-354.

Levy, J.; et al. *Nutrition and Cancer*. 1995, 24, pp. 257-266.

Lewin, Roger. "Earth's field flips flipping fast." *New Scientist.* Vol. 133 # 1805, January 25, 1992, page 26.

Lewis, John S. (1996). *Rain of iron and ice: The very real threat of comet and asteroid bombardment.* New York: Addison-Wesley Publishing Co.

Libby, L. M.; Lukens, H. R. "Production of radiocarbon in tree-rings by lightning bolts." *Journal of Geophysical Research.* Vol. 78 # 26, September 10, 1973, pp. 5902-5903.

Libby, W. F. "Radiocarbon dating." *American Scientist.* Vol. 44, January 1956, pp. 98-112.

Liddell, H. G.; Scott, R. (1881). *An intermediate Greek-English Lexicon, 7th ed.* Oxford: Oxford at the Clarendon Press. (Classical Greek Lexicon)

Liguori, Nick (2021). *Echoes of Ararat: A Collection of Over 300 Flood Legends from North and South America.* Green Forest, AR: Master Books.

Limbaugh, Conrad; Shepard, Francis P. (1957, Joel W. Hedgpeth, editor). *Treatise on marine ecology and paleoecology*. Vol. 1, New York: The Geological Society of America.

Linde, Andrei. "The self-reproducing inflationary Universe." *Scientific American.* Vol. 271 # 5, November 1994, pp. 48-55.

Lingenfelter, R. E.; Flamm, E. J. "Production of carbon 14 by solar protons." *Journal of the Atmospheric Sciences.* Vol. 21, March 1964, pp. 134-140.

Linton, Marigold; Gallo, Philip S. Jr. (1975). *The practical statistician: Simplified handbook of statistics.* Monterey, CA: Brooks/Cole Publishing Co.

Liversidge, Anthony. "Heresy! Three modern Galileos (Scientific theories of Linus Pauling, Peter Duesberg, and Thomas Gold)." *Omni.* Vol. 15 # 8, June 1993, pp. 43-48.

Lock, G. S. H. (1990). *The growth and decay of ice.* New York: Cambridge University Press.

Lockhart, Clinton. (1915). *Principles of interpretation.* Delight, AR: Gospel Light Publishing Co.

Loget, Nicolas; Van Den Driessche, Jean (June 2006). "On the origin of the Strait of Gibraltar." *Sedimentary Geology*. 188-189: 341-356.

Longwell, Chester R.; Flint, Richard Foster; Sanders, John E. (1969). *Physical geology*. New York: John Wiley and Sons, Inc.

Lubin, Dan. "The role of the tropical super greenhouse effect in heating the ocean surface." *Science.* Vol. 265 # 5169, July 8, 1994, pp. 224-227.

Machel, H. G.; Burton, E. A. "Chemical and microbial processes causing anomalous magnetization in environments affected by hydrocarbon seepage." *Geophysics.* Vol. 56 # 5, May 1991, pp. 598-605.

Macmillan, D. H. (1966). *Tides.* New York: American Elsevier Publishing Co. Inc.

Maddox, John. "Holes in the big bang." *Nature.* Vol. 372 # 501, November 3, 1994, pp. 16-18.

Mahoney, Michael J.; DeMonbreun, Bobby G. Psychology of the scientist: An analysis of problem-solving bias. *Cognitive Therapy Research* 1, 229-238, (1977). (Problem-solving skills

of PhD scientists were compared with conservative Christian ministers.)

Mai, J.; et al. *Biological Trace Element Research*. 1990, 24, pp. 109-117.

Malone, Leo J. (1989). *Basic concepts of chemistry*. 3rd ed., New York: John Wiley and Sons.

Margon, Bruce. "The missing mass." *Mercury*. January/February 1975, pp. 2-6.

Marion, Jerry B. (1981). *Physics in the modern world*. Orlando, FL: Academic Press Inc.

Marshall, Eliot. "Small comets/Big flap" *Science*. Vol. 257 # 70, July 31, 1992, pp. 622-623.

Martin, Charles (2009). *Flood legends, global clues of a common event*. Green Forest, AR: Master Books (New Leaf Pub. Group).

Mather, Kirtley F. (1964). *The Earth beneath us*. New York: Random House.

Matthews, Samuel W. "Antarctica's nearer side." *National Geographic Magazine*. Vol. 140 # 5, November 1971, pp. 622-655.

Matthews, Samuel W. "This changing Earth." *National Geographic Magazine*. Vol. 143 # 1, January 1973, pp. 5-37.

Maurette, M.; Olinger, C.; Christophe Michel-Levy, M.; Kurat, G.; *et al*. "A collection of diverse micrometeorites recovered from 100 tonnes of Antarctic blue ice." *Nature*. Vol. 351, May 2, 1991, pp. 44-46.

Mauskop, A.; et al. *Clinical Science*. 1995, 89, pp. 633-636.

McDonald, Keith L.; Gunst, Robert H. *An analysis of the*

earth's magnetic field from 1835 to 1965. ESSA Technical Report, IER 46-IES 1. Washington, DC: U.S. Government Printing Office.

McDonald, Kim A. "Rapid climate shifts during last ice age linked to Atlantic icebergs." *The Chronicle of Higher Education.* Vol. 40 # 4, September 15, 1993, page A 15.

McLean, Dewey M. "Asteroid or volcano: Have the volcanists been heard?" *Science.* Vol. 259 # 5097, February 12, 1993, page 877.

Mayewski, P. A.; Meeker, L. D.; Whitlow, S.; Twickler, M. S.; Morrison, M. C.; Alley, R. B.; Bloomfield, P.; Taylor, K. "The atmosphere during the Younger Dryas." *Science.* Vol. 261 # 5118, July 9, 1993, pp. 195-197.

Mauskop, A.; et al. *Clinical Science.* 1995, 89, pp. 633-636.

Mazzotta, M. *Journal of American Podiatric Medical Association.* 1994, 84(9), pp. 456-462.

Medawar, Peter Brian (1984). *The Limits of Science*. New York: Harper & Row Pub., p. 5.

Medical Tribune. May 22, 1997, p. 32.

Medieros, D. M. *Nutrition Report*. 1993, 89, p. 96.

Melichar, B.. et al. (1994). *Clinical Investigations*. 72, 101-104.

Merriam-Webster's Online Collegiate Dictionary: https://www.merriam-webster.com/dictionary/myocardial%20infarction

Merriam-Webster's Collegiate Dictionary. 10th edition, Springfield, MA: Merriam-Webster, Inc.

Missouli – Lake: https://www.youtube.com/watch?v=cxxLU8ZtMH4

Mitroff, Ian I. "Norms and counter-norms in a select group of Apollo Moon scientists: A case study of the abivalence of scientists. *American Sociological Review*. Vol. 39, August 1974, pp. 579-595.

Monastersky, Richard. "New record for world's oldest rocks." *Science News.* Vol. 136 # 15, October 7, 1989, page 228.

Monastersky, Richard. "Counting the DEAD, Did the dinosaurs and their contemporaries die out with a bang or a whimper?" *Science News.* Vol. 141, February 1, 1992, pp. 72-75.

Monastersky, Richard. "Oxygen-extinction theory draws counterfire." *Science News.* Vol. 144, November 6, 1993, page 294.

Monastersky, Richard. "The pulse of T. Rex, Were dinosaurs warm-blooded? …" *Science News.* Vol. 145 # 20, May 14, 1994, pp. 312-313.

Monastersky, Richard. "Shots from outer space: Iconoclast links chaos, cosmic impacts, and Earth's internal workings." *Science News.* Vol. 147 # 4, January 28, 1995, pp. 58-59 and 63.

Monastersky, Richard. "What lurks inside a dinosaur's nose?" *Science News.* Vol. 148 # 21, November 18, 1995, page 330.

Monastersky, Richard. "The call of catastrophes." *Science News*. Vol. 151 # 9, March 1, 1997, page S20.

Monastersky, Richard. "Is Earth pelted by space snowballs?" *Science News*. Vol. 151 # 22, May 31, 1997, page 332.

Montgomery, John Warwick (1974). *The quest for Noah's ark. 2nd ed.* Minneapolis, MN: Dimension Books.

Moon, Parry; Spencer, Domina E. "Binary stars and the

velocity of light." *Journal of the Optical Society of America.* Vol. 43 # 8, August 1953, pp. 635-641.

Morell, Virginia. "Dino DNA: The hunt and the hype." *Science.* Vol. 261 # 5118, July 9, 1993, pp. 160-162.

Morell, Virginia. "How lethal was the K-T impact?" *Science.* Vol. 261 # 128, September 17, 1993, pp. 1518-1519.

Morell, Virginia. "Warm-blooded dino debate blows hot and cold." *Science.* Vol. 265 # 169, July 8, 1994, page 188.

Morgan, V. I.; Goodwin, I. D.; Etheridge, D. M.; Wookey, C. W. "Evidence from Antarctic ice cores for recent increases in snow accumulation." *Nature.* Vol. 354, November 7, 1991, pp. 58-60.

Morowitz, Harold. *Energy flow in biology*. New York: Academic Press, 1968, p. 99.

Morton, Glen (1987). *The geology of the flood*. Dallas, TX: DMD Publishing Co.

Mossad, S. B.; et al. *Annals of Internal Medicine.* 1996, 125(2), pp. 81-88.

Nakadaira, H.; et al. *Archives of Environmental Health*. 1995, 50(5), pp. 374-380.

Nature Medicine. 1995, 1, pp. 433-436.

Nebergall, William H.; Schmidt, Frederic C.; Holtzclaw, Henry F. Jr. (1968). *College chemistry.* Lexington, MA: D. C. Heath and Company.

Nelson, Byron C. (1968). *The deluge story in stone.* Minneapolis, MN: Bethany Fellowship Inc. Publishers.

Nelson, Ethel R.; Broadberry, Richard E. (1994). *Genesis and the mystery Confucius couldn't solve.* Saint Louis, MO: Concordia Pub. House.

Nelson, Mary Jo. "Sooners at core of gas origin debate." *The Sunday Oklahoman.* November 22, 1987, page 1C.

Newgrosh, Bernard. "Scientific dating method and absolute chronology." *Journal of Ancient Chronology Forum.* Vol. 2, 1988, pp. 60-68.

Newgrosh, Bernard. "Still at the crossroads: A response to Mike Baillie." *Journal of Ancient Chronology Forum*. Vol. 3, 1989/90, pp. 37-41.

Newgrosh, Bernard. "Living with radiocarbon dates, A response to Mike Baillie." *Journal of Ancient Chronology Forum*. Vol. 5, 1991/92, pp. 59-67.

Nielsen, F. *FASEB Journal*. 1991, 5, p. 2661.

Nunez, Diego Rivera; Walker, Michael, J. "Grape remains and direct radiocarbon dating: a disconcerting experience from El Prado, Murcia, Spain." *Antiquity.* Vol. 65 # 249, 1991, pp. 905-908.

Nutrition Reviews. July 1990, 40(7), pp. 286-287.

Oberbeck, Verne R.; Marshall, John R.; Aggarwal, Hans. "Impacts, Tillites, and the Breakup of Gondwanaland." *The Journal of Geology*. Vol. 101 # 1, January 1993, pp. 1-19.

Oberbeck, Verne R.; Marshall, John R.; Aggarwal, Hans. "Impacts, Tillites, and the Breakup of Gondwanaland: A Reply." *The Journal of Geology*. Vol. 101 # 5, September 1993, pp. 679-683.

Officer, Charles B.; Drake, Charles L. "The Cretaceous-Tertiary transition." *Science.* Vol. 219 # 4591, March 25, 1983, pp. 1383-1390.

Officer, Charles B.; Drake, Charles L. "Iridium, Shocked Minerals, and the Cretaceous/Tertiary Boundary." *Physics*

Today. January 1989, pp. S45-S46.

Oldfield, Frank. Environmental magnetism-A personal perspective" *Quaternary Science Reviews*. Vol. 10, 1991, pp. 73-85.

Ohlhorst, Sara Davis; Slavin, Margaret; Bhide, Jennifer; Bugusu, Betty. (Feb. 29, 2012). *Use of Iodized Salt in Processed Foods in Select Countries Around the World and the Role of Food Processors.* https://onlinelibrary.wiley.com/doi/full/10.1111/j.1541-4337.2011.00182.x

O' Lone, Richard G. "Volcanic residue cited as possible source of misleading ozone data." *Aviation week & space technology*. Vol. 126, Issue 2, January 12, 1987, pp. 91-92.

O' Keefe, J. H. *Mayo Clinic Proceedings*. 1995,70: pp. 69-79.

Olivares, M.; et al. *American Journal of Clinical Nutrition*. 1996, 63, pp. 791S-796S.

Oltmans, S. J.; Hofmann, D. J. "Increase in lower-stratospheric water vapour at a mid-latitude Northern Hemisphere site from 1981 to 1994." *Nature*. Vol. 374, March 9, 1995, pp. 146-149.

Omori, Yuko; Tanimoto, Hiroshi; et al., (April 29, 2015) "Enhancement of dimethylsulfide production by anoxic stress in natural seawater" *Geophysical Research Letters*. https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2015GL063546

Ordway, Richard J. (1966). *Earth science.* Princeton, NJ: D. Van Nostrand Co. Inc.

Osborne, David. "The origin of petroleum." *The Atlantic Monthly*. February, 1986, pp. 39-54.

O'Rourke, J. E. "Pragmatism versus materialism in

stratigraphy." *American Journal of Science.* Vol. 276 # 1, January 1976, pp. 47-55.

Osborne, David. "The origin of petroleum." *The Atlantic Monthly.* February, 1986, pp. 39-54.

Pannella, Giorgio; MacClintock, Copeland; Thompson, Maxwell N. "Paleontological evidence of variations in length of synodic month since Late Cambrian." *Science.* Vol. 162, November 15, 1968, pp. 792-796.

Park, Matthew K.; Muhvich, Kenneth H.; Myers, Roy A. M.; Marzella, Louis. (1994, Kindwall, Eric P., editor). *Hyperbaric medicine practice.* Flagstaff, AZ: Best Publications.

Pasachoff, Jay M. "Comment on 'Do cathedral glasses flow?,' by Edgar Dutra Zanotto" *American Journal of Physics*. Vol 66 # 11, November 1998, pp. 1021-1022.

Patten, Donald W. (1966). *The biblical flood and the ice epoch.* Grand Rapids, MI: Baker Book House.

Pearlman, Dale Ann (editor, 1996). *Stephen J. Gould and Immanuel Velikovsky, Essays in the continuing Velikovsky affair*. Forest Hills, NY: Ivy Press Books.

Peirce, Charles Sanders, (as quoted by Medawar, Peter Brian, 1984). *The Limits of Science*. New York: Harper & Row Pub.

Pegg, D. L.; et al. "A fault surface exposed on Mercury." *Planetary and Space Science*. Vol. 201, July 2021.
Planetary and Space Science | Journal | ScienceDirect.com by Elsevier

Peltier, W. Richard. "Ice age paleotopography." *Science.* Vol. 265 # 169, July 8, 1994, pp. 195-201.

Penland, J. *Environmental Health Perspectives*. 1994, 7, p. 102.

Penn Medicine:
https://www.pennmedicine.org/updates/blogs/health-and-wellness/2019/april/blood-types

Pennisi, Elizabeth. "Water, water everywhere: Surreptitiously converting dead matter into oil and coal." *Science News*. Vol. 143, February 20, 1993, pp. 121-125.

Perkins, James A.; Sims, John D. "Correlation of Alaskan varve thickness with climatic parameters, and use in paleoclimatic reconstruction." *Quaternary Research.* Vol. 20, 1983, pp. 308-320.

Peterson, I. "Counting neutrinos from an 'artificial sun.'" *Science News.* Vol. 147 # 1, January 7, 1995, page 6.

Phillips, John B.; Borland, S. Chris. "Magnetic compass orientation is eliminated under near-infrared light in the eastern red-spotted newt Notophthalmus viridescens." *Animal Behaviour.* Vol. 44 # 4, October 1992, pp. 796-797.

Pierce, M. J.; *et al.* "The Hubble constant and Virgo cluster distance from observations of Cepheid variables." *Nature.* Vol. 371 # 496, September 29, 1994, pp. 385-389.

Piggott, Stuart. "The radiocarbon date from Durrington Walls." *Antiquity.* Vol. 33 # 132, December 1959, pp. 289-290.

Pihlainen, J. A.; Brown, R. J. E.; Leggett, R. F. "Pingo in the Mackenzie Delta, Northwest Territories, Canada." *Bulletin of the Geological Society of America.* Vol. 67 # 8, August 1956, pp. 1119-1122.

Pitz, Gordon F.; Reinhold, Helen; Geller, E. Scott. Strategies of information seeking in deferred decision making. *Organizational Behavior and Human Performance*. Vol. 4, Issue 1. Feb. 1969, pp. 1-19.

Pledge, Charles. (1970). *Getting acquainted with the Old*

Testament Vol. I. Memphis, TN: Pledge Pub.

Pollard, Sidney; Robertson, Paul. (1979) *The British Shipbuilding Industry, 1870-1914.* Cambridge, MA: Harvard Univ. Press.

Prantzos, N.; Vangioni-Flam, E. (1993). *Origin and evolution of the elements.* New York: Cambridge University Press.

Pyle, D. M. "Ice-core acidity peaks, retarded tree growth and putative eruptions." *Archaeometry.* Vol. 31 # 1, 1989, pp. 88-91.

Rabbani, L.; et al. *Clinical Cardiology*. 1996, 79, pp. 841-844.

Raghavan, R. S. "Solar Neutrinos - From puzzle to paradox." *Science.* Vol. 267 # 5194, January 6, 1995, pp. 45-51.

Ralph, Elizabeth K.; Michael, Henry N. "Twenty-five years of radiocarbon dating." *American Scientist.* Vol. 62, Sept./Oct. 1974, pp. 553-560.

Raup, David M. (1983, Godfrey Laurie R., editor). *Scientists confront creationism*. New York: W. W. Norton & Co., pp. 147-162.

Raup, David M. "Geology and Creationism." *Field Museum of Natural History Bulletin.* Vol. 54, March 1983, pp. 16-25. (This article is adapted from the essay "The Geological and Paleontological Arguments of Creationism," by David Raup, appearing in *Scientists Confront Creationism* [W. W. Norton, 1983] edited by Laurie R. Godfrey).

Ravn, H. *Thrombosis and Hemostasis*. 1996, 76, pp. 88-93.

Reese, K. M. "Workers find whale in diatomaceous earth quarry." *Chemical and Engineering News.* Vol. 54 # 42, October 11, 1976, page 40.

Rehwinkel, Alfred M. (1951) *The flood in the light of the Bible,*

geology, and archaeology. Saint Louis, MO: Concordia Pub. House.

Reinke CM, Breitkreutz J, Leuenberger H. Aluminum in over-the-counter drugs: risks outweigh benefits?. *Drug Safety* 2003;26(14):1011-25.

Renn, Jürgen; Tilman Sauer and John Stachel (1997). "The Origin of Gravitational Lensing: A Postscript to Einstein's 1936 Science paper." *Science,* Jan. 10, 1997*,* **275** (5297): 184–6. Cf. https://www.astronomynotes.com/relativity/s4.htm also.

Rennicke, Jeff. "Hearts of ice-a pingo, alas, is not forever." *Backpacker*. Vol. 16 # 1, January 1988.

Robb, A. M. (Singer, Charles; Holmyard, E. J.; Hall, A. R.; and Williams; Trevor I. editors) (1958). *A History of Technology*. Vol. V, New York: Oxford Univ. Press.

Rohl, David M. (1995). *Pharaohs and kings: A biblical quest.* New York: Crown Publishers, Inc.

Rowe, Alexandra J.; et al. Blood group O protects against severe Plasmodium faliciparum malaria through the mechanism of reduced rosetting. *Proceedings of the National Academy of Science of the United States of America*. Oct. 30, 2007, 104(44), pp. 17471-17476.

Riggs, Alan C. "Major carbon-14 deficiency in modern snail shells from southern Nevada springs." *Science.* Vol. 224 # 4644, April 6, 1984, pp. 58-61.

Rouchy, Jean-Marie; Saint Martin, Jean-Paul. "Late Miocene events in the Mediterranean as recorded by carbonate-evaporite relations." *Geology*. Vol. 20 # 7, July 1992, pp. 629-632.

Ruben, John. "Hot under the collar over dinosaurs." *Science News*. Vol. 146 # 4, July 23, 1994, page 63.

Rubenstein, A. H., et al. *Nature*. 1962, 194, pp. 188-189.

Rubin, Meyer; Taylor, Dwight W. "Radiocarbon activity of shells from living clams and snails." *Science.* Vol. 141, August 16, 1963, page 636.

Rupke, N. A. "Sedimentary evidence for the allochthonous origin of *Stigmaria,* Carboniferous, Nova Scotia." *Geological Society of America Bulletin.* Vol. 80, October 1969, pp. 2109-2114.

Rupke, N. A. "Sedimentary evidence for the allochthonous origin of *Stigmaria,* Carboniferous, Nova Scotia: Reply." *Geological Society of America Bulletin.* Vol. 81, August, 1970, pp. 2535-2538.

Sagan, Carl. Editor. *Communications with extra-terrestrial intelligence*. M.I.T. Press, 1973, p. 46.

Salisbury, Frank. "Natural selection and the complexity of the gene." *Nature*, Vol. 222 # 5217, Oct. 25, 1969, pp. 342-343.

Salvatores, Massimo; Prunier, C. "Transmutation and nuclear radioactive wastes management: a perspective." *Endeavour, New Series.* Vol. 17 # 3, 1993, pp. 116-120.

Sanjuliani, A. *International Journal of Cardiology*. 1996, 56, pp. 177-183.

Saupe, Francis; *et al.* "A possible source of error in ^{14}C dates: Volcanic emanations (examples from the Monte Amiata district, provinces of Grosseto and Sienna, Italy)." *Radiocarbon.* Vol. 22 # 2, 1980, pp. 525-531.

Saxby, J. D.; Riley, K. W. "Petroleum generation by laboratory-scale pyrolysis over six years simulating conditions in a subsiding basin." *Nature.* Vol. 308, March 8, 1984, pp. 177-179 (This article is discussed in *Science News.* Vol. 125 # 12, March 24, 1984, page 187).

Saxby, J.D.; Bennett, A.J.R.; Corcoran, J.F.; Lambert, D.E.; Riley, K.W. "Petroleum generation: Simulation over six years of hydrocarbon formation from torbanite and brown coal in a subsiding basin." *Organic Geochemistry*. Vol. 9 # 2, 1986, pp. 69-81.

Schadewald, Robert J.
https://ncse.ngo/six-flood-arguments-creationists-cant-answer

Schaefer, John B. "The unavailability of 'old light.'" *American Journal of Physics*. Vol. 57 # 3, March 1989.

Scrutton, Colin T. "Periodicity in Devonian coral growth." *Palaeontology*. Vol. 7 # 4, 1964, pp. 552-558.

Seaborn, C. D.; et al. *Nutrition Today*. July – Aug. 1993, pp. 13-18.

Seachrist, Lisa. "Sea turtles master migration with magnetic memories." *Science*. Vol. 264 # 5159, April 29, 1994, pp. 661-662.

Searle, Mike. "The rise and fall of Tibet." *Nature*. Vol. 374 # 6517, March 2, 1995, pp. 17-18.

Sears, Jack Wood. (1969). *Conflict and harmony in science and the Bible*. Grand Rapids, MI: Baker Book House.

Sears, W. S.; Zemansky, M. W. (1960) *College Physics, 3rd ed*. Reading, MA: Addison-Wesley Pub. Co.

Seelig, M. S. *American Journal of Cardiology*. 1991, pp. 1221-1222.

Shaw, Herbert R. (1994). *Craters, cosmos, and Chronicles: A new theory of Earth*. Stanford, CA: Stanford University Press.

Shea, James H. "Twelve fallacies of uniformitarianism." *Geology*. Vol. 10 # 9, September 1982, pp. 455-460.

Shear, William A. "The early development of terrestrial ecosystems." *Nature.* Vol. 351, May 23, 1991, pp. 283-289.

Sheffield, Paul J. (1988, Davis, Jefferson C.; Hunt, Thomas K., Editors). *Problem wounds.* New York: Elsevier Science Publishing Co. Inc.

Shelton, John S. (1966). *Geology illustrated.* San Francisco, CA: W. H. Freeman and Co.

Shipman, James T.; Wilson, Jerry D.; Todd, Aaron W. (1993). *An introduction to physical science.* Lexington, MA: D. C. Heath and Company.

Shoemaker, E. M.; Robinson, M. S.; Eliason, E. M. "The south pole region of the Moon as seen by Clementine." *Science.* Vol. 266, Issue 5192, December 16, 1994.

Slade, Martin A.; Butler, Bryan J.; Muhleman, Duane O. "Mercury radar imaging: Evidence for polar ice." *Science.* Vol. 258, October 23, 1992, pp. 635-640.

Slot, H,; et al. *Neuropediatrics*. 1993, 24(3),pp. 139-142.

Smetena, R.; et al. *Magnesium Bulletin*. 1991, 13(4), pp. 125-127.

Smith, David E.; et al. "The Contribution of Small Impact Craters to Lunar Polar Wander." *The Planetary Science Journal*, 3:217, Sept. 2022.
https://iopscience.iop.org/article/10.3847/PSJ/ac8c39/pdf

Smith, David G. (1981). *The Cambridge encyclopedia of Earth sciences.* New York: Crown Publishers Inc.

Smith, Paul V. Jr. "The occurrence of hydrocarbons in recent sediments from the Gulf of Mexico." *Science.* Vol. 116, October 24, 1952, pp. 437-439.

Smith, Peter J. (1986). *The Earth.* New York: Macmillan Pub.

Co.

Snodderly, D. *American Journal of Clinical Nutrition*. 1995, 62S, pp. 1448-1461.

Soffer, Bernard H.; Lynch, David K. "Some paradoxes, errors, and resolutions concerning the spectral optimization of human vision." *American Journal of Physics*. Vol. 67 # 11, November 1999, pp. 946-953.

Sofia, S.; O'Keefe, J. R.; Lesh, J. R.; Endal, A. S. "Solar constant: Constraints on possible variations derived from solar diameter measurements." *Science.* Vol. 204 # 4399, June 22, 1979, pp. 1306-1307.

Sonett, C. P., *et al.* "Late Proterozoic and Paleozoic tides, retreat of the Moon, and rotation of the Earth." *Science.* Vol. 273 # , July 5, 1996, pp. 100-104.

Song, Xianodong; Richards, Paul G. "Seismological evidence for differential rotation of the Earth's inner core." *Nature*. Vol. 382 # 6588, July 18, 1996, pp. 221-224.

Sonnett, C. P.; Williams, G. E. "Solar periodicities expressed in varves from Glacial Skilak Lake, southern Alaska." *Journal of Geophysical Research.* Vol. 90 # A12, December 1, 1985, pp. 12,019-12,026.

Souami, D.; et al. "On the local and global properties of gravitational spheres of influence." *Monthly Notices of the Royal Astronomical Society*, Vol. 496, #4, Aug. 2020, pp. 4287–4297, https://doi.org/10.1093/mnras/staa1520.

Spinney, Laura. "Honeybees iron out their directional problems." *New Scientist.* Vol. 143 # 1935, July 23, 1994, page 16.

Stahelin, H. B. *British Journal of Clinical Practice*. Dec. 1990, 44(11), pp. 543-545.

Stanley, Daniel Jean. “Med desert theory is drying up: Recent thinking favors a shallow, briny sea.” *Oceanus.* Vol. 33 # 1, Spring 1990, pp. 14-23.

Stanley, William O. (1967). *Education and social integration.* New York: Teachers College Press, Columbia University.

St James-Roberts, Ian. “Cheating in science.” *New Scientist.* Vol. 72 # 1028, November 25, 1976, pp. 466-469.

Steinmann, Andrew E. “Challenging the authenticity of Cainan, son of Arpachshad.” *Journal of the Evangelical Theological Society.* 60/4 (2017), pp. 697-711.

Stokes, William Lee. (1973). *Essentials of Earth history: An introduction to historical geology.* 3rd ed., Englewood Cliffs, NJ: Prentice-Hall.

Strickling, James E. “Peleg’s division.” *Creation research society quarterly.* Vol. 15 # 3, December 1978, pp. 159-160.

Stuiver, Minze; Kromer, Bernd; Becker, Bernd; Ferguson, C. W. “Radiocarbon age calibration back to 13,300 years BP and the ^{14}C age matching of the German oak and US bristlecone pine chronologies.” *Radiocarbon.* Vol. 28 # 2B, 1986, pp. 969-979.

Sturrock, P. A.; Fischbach, E.; and Scargle, J.D. Comparative Analyses of Brookhaven National Laboratory Nuclear Decay Measurements and Super-Kamiokande Solar Neutrino Measurements: Neutrinos and Neutrino-Induced Beta-Decays as Probes of the Deep Solar Interior. *Sol Phys* **291,** 3467–3484 (2016).

Stutzer, Otto. (1940). *Geology of coal.* Chicago, IL: The University of Chicago Press.

Suadicani, P.; et al. *Atherosclerosis.* 1992, 96, pp. 33-44.

Sudarsanareddy, Lokireddy; et al. Genetic predisposition to chikungunya – a blood group study in chikungunya affected families. *Virology Journal*. June 16, 2009, 6, p. 77. https://pubmed.ncbi.nlm.nih.gov/19531208/

Sulerzhitzky, L. D. "Radiocarbon dating of volcanoes." *Bulletin Volcanologique*. Vol. 35, 1970, pp. 85-94.

Sumner Dawn Y.; Grotzinger, John P. "Were kinetics of Archean calcium carbonate precipitation related to oxygen concentration? *Geology*. Vol. 24 # 2, February 1996, pp. 119-122.

Super, M. *Lancet*. Sept. 21, 1991, pp. 755-756.

Sweeten, M. K.; et al. "Heme Iron Relative to Total Dietary Intake of Iron–Review." *Journal of Food Quality*. 9 #4, 1986, pp. 263-275.

Symonds, Robert B.; Rose, William I.; Reed, Mark H. "Contribution of Cl- and F-Bearing gases to the atmosphere by volcanoes." *Nature*. Vol. 334 Issue 6181, August 4, 1988, pp. 415-418.

Tabazadeh, A.; Turco, R. P. "Stratospheric chlorine injection by volcanic eruptions: HCl scavenging and implications for ozone." *Science*. Vol. 260, May 21, 1993, pp. 1082-1086.

Tarbuck, Edward J.; Lutgens, Frederick K. (1991). *Earth science*. 6th ed., New York: Macmillan Publishing Co.

Taubes, Gary. "Electronic battle over solar neutrinos." *Science*. Vol. 266 # 5188, November 18, 1994, pp. 1157-1158.

Thatcher, Virginia S.; McQueen Alexader. (editors). (1965) *The New Webster Dictionary of the English Language, Vol. II* (Foreign words and phrases section). New York: Grolier Inc.

Thayer, Joseph (1970). *Greek-English lexicon of the New Testament*. Grand Rapids, MI: Zondervan Pub. House.

Thompson, Bert. (1986a). *Essays in apologetics*. Vol. II, Montgomery, AL: Apologetics Press Inc.

Thompson, Bert. (1986b). *The global, universal, worldwide flood of Noah* (*Genesis 6-9*). Montgomery, AL: Apologetics Press Inc.

Thompson, Bert. "The origin of 'races.'" *Reason and Revelation*. Vol. 10 # 8, August 1990, pp. 33-36.

Thomson, Sir William [Lord Kelvin]. (1894). *Popular lectures and addresses of sir William Thomson*. Vol. II, London: Macmillan and Co.

Tomlinson, R. *British Medical Journal*. 1995, 310(6973), p. 148.

Thorarinsson, Sigurdur. "Surtsey: Island born of fire." *National Geographic Magazine*. Vol. 135 # 5, May 1965, pp. 713-726.

Tiemel, Chen; Quan, Yang. "Antiquity of *Homo sapiens* in China." *Nature*. Vol. 368, March 3, 1994, pp. 55-57.

Tobias, Phillip V. "Piltdown unmasked." *The Sciences*. Vol. 34 # 1, January-February 1994, pp. 38-43.

Tolmachoff, I. P. "The carcasses of the mammoth and rhinoceros found in the frozen ground of Siberia." *Transactions of the American Philosophical Society*. Vol. 23, 1929, pp. i-74.

Tomkin, Jocelyn. "What gas lies behind the greenH_2Ouse effect?" *Physics Today*. Vol. 45 # 12, December 1992.

Travers, R. L.; et al. *Journal of Nutritional Medicine*. 1990, 1, pp. 127-132.

Travers, R. L.; et al. *Journal of Nutritional Medicine*. 1990, 1,

pp. 237-232

Trefil, James. "Phenomena, comment and notes." *Smithsonian.* Vol. 24 # 5, August 1993, pp. 12-14.

Trench, Richard Chenevix. (1989). *Synonyms of the New Testament*. Grand Rapids, MI: Baker book House.

Troyka, Lynn Quitman, 1993, *Simon & Schuster Handbook for Writers*. Englewood, Cliffs, NJ: Prentice Hall.

Tyree, David M. "New era in the loneliest continent." *National Geographic Magazine.* Vol. 133 # 2, February 1963, pp. 260-296.

Tyson, Neil de Grasse. "The size and age of the Universe." *Natural History.* Vol. 104 # 2, February 1995, pp. 72-75.

Tyson, Peter. "The dinosaurs' last gasp." *Technology Review.* Vol. 97 # 4, May/June 1994, page 12.

Usher, Abbot Payson. *Quarterly Journal of Economics*. Vol. 42, 1928, pp. 465-478.

Vatcher, Faith de Mallet. "The radio-carbon dating of the Nutbane Long Barrow." *Antiquity.* Vol. 33 # 132, December 1959, page 289.

Viola, V. E. "Teaching nuclear science: A cosmological approach." *Journal of Chemical Education.* Vol. 71 # 10, October 1994, pp. 840-844.

Von Engeln, O. D.; Caster, Kenneth, E. (1952) *Geology*. New York: McGraw-Hill Book Company.

Vreugdenhil, G. *Annals of Reumatic Diseases*. 1990, 49, pp. 93-98.

Wade, Nicholas. "Duck!" *The New York Times Magazine.* May 28, 1995, Section 6, page 16, column 1.

Wakefield, Julie. “Cosmic Rain.” *Sky & Telescope.* Vol. 94 # 2, August 1997, pp. 28-31.

Wakeham K, Kavanagh K. The burden of HPV-associated anogenital cancers. *Current oncology reports.* 2014;16(9):1-11.

Wald, George. (1955, Piel, Gerard, *et al.* editors). *The physics and chemistry of life*. New York: Simon and Schuster.

Wallmann, Klaus, *et al.* “Salty brine on the Mediterranean sea floor.” *Nature.* Vol. 387 #6628, May 1, 1997, pp. 31-32.

Warshofsky, Fred. “When the sky rained fire: the Velikovsky phenomenon.” *Readers Digest*. December 1975, pp. 219-240.

Wason, Peter; Johnson-Laird, P. N. (Tweney, Ryan D.; Doherty, Michael E.; Mynatt, Clifford R. editors) 1981. *On Scientific Thinking*. New York: Columbia Univ. Press.

Waters, Tom. “Return to Krakatau.” *Discover.* Vol. 9 # 10, October 1988, pp. 64-67.

Watson, R. R.; et al. *American Journal of Clinical Nutrition*. 1991, 53, pp. 90-94. See also: Landrum, J., et al. *Advances in Pharmacology*. 1997, 38, pp. 537-553.

Wells, John W. “Coral growth and geochronometry.” *Nature*. Vol. 197 # 4871, March 9, 1963, pp. 948-950.

Wheeler, Elisabeth; Scott, Richard A.; Barghoorn, Elso S. “Fossil Dicotyledonous Woods From Yellowstone National Park.” *Journal of the Arnold Arboretum.* Vol. 58, 1977, pp. 280-302.

Wheeler, Elisabeth; Scott, Richard A.; Barghoorn, Elso S. “Fossil Dicotyledonous Woods From Yellowstone National Park, II.” *Journal of the Arnold Arboretum.* Vol. 59 # 1, January 1978, pp. 1-25.

Whitcomb, John C.; Morris, Henry M. (1961). *The Genesis flood.* Grand Rapids, MI: Baker Book House.

Whitcomb, John C. (1983). *The world that perished.* Grand Rapids, MI: Baker Book House.

Wichman, R. W.; Wood, C. A. "The Davy Crater Chain: Implications for tidal disruption in the Earth-Moon System and elsewhere." *Geophysical Research Letters*, Vol. 22, # 5, p. 583-586, 1995.

Wilson, J. Tuzo. "Orogenesis as the fundamental geological process." *Transactions, American Geophysical Union.* Vol. 33 # 3, June 1952, pp. 444-449.

Wilson, J. Tuzo. "Geophysics and continental growth." *American Scientist.* Vol. 47, Spring, March 1959, pp. 1-24.

Wilson, R. D.; Monaghan, P. H.; Osanik, A.; Price, L. C.; and Rogers, M. A. "Natural marine oil seepage." *Science.* Vol. 184 # 4139, May 24, 1974, pp. 857-865.

Wolbach, Wendy S.; Lewis, Roy S.; Anders, Edward. "Cretaceous extinctions: Evidence for wildfires and search for meteoritic material." *Science.* Vol. 230 # 4722, October 11, 1985, pp. 167-170.

Wolbach, Wendy S.; Gilmour, Ian; *et al.* "Global fire at the Cretaceous-Tertiary boundary." *Nature.* Vol. 334 # 6184, August 25, 1988, pp. 665-669.

Wolfe, Drew H. (1986). *General, organic, and biological chemistry*. New York: McGraw-Hill Co.

Wolfson, Richard; Pasachoff, Jay M. (1995). *Physics for scientists and engineers.* New York: Harper Collins College Publishers.

Woodbridge, C. G. (1950). "The role of boron in the agricultural regions of the Pacific Northwest." *The Scientific Monthly, Vol.*

70, # 2. Feb. 1950.

Woodmorappe, John (1996) *Noah's Ark: A Feasibility Study*. Sanyee, CA: Institute for Creation Research.

Wright, L.; et al. *International Clinical Nutrition Review*. 1989, 9, pp. 118-119.

Xue-Yi, C.; et al. *New England Journal of Medicine*. 1994, 331(26), pp. 1739-1744.

Yapp, Crayton J.; Poths, Harald. "Ancient atmospheric CO_2 pressures inferred from natural goethites." *Nature*. Vol. 355, January 23, 1992, pp. 342-344.

Yeum, K. *Journal of the American College of Nutrition*. 1995, 14, pp. 536 (abstract 48).

Yockey, Hubert P. "A Calculation of the Probability of Spontaneous Biogenesis by Information Theory." *Journal of Theoretical Biology*. Vol. 67, 1977, pp. 377-398. http://www.sciencedirect.com/science/article/pii/0022519377900443

Young, Grant M. "Impacts, Tillites, and the Breakup of Gondwanaland: A Discussion." *The Journal of Geology*. Vol. 101 # 5, September 1993, pp. 675-679.

Yuan, Yue; et al. "A Biochemical-Biophysical Study of Hemoglobins from Woolly Mammoth, Asian Elephant, and Humans." *Biochemistry*. 2011 Aug 2;50(34):7350–7360.

Zage, Wayne M. "The geometry of binocular visual space." *Mathematics Magazine*. Vol. 53 # 5, November 1980, pp. 289-294.

Zahl, Paul A. "Portrait of a fierce and fragile land." *National Geographic Magazine*. Vol. 141 # 3, March 1972, pp. 302-314.

Zanotto, Edgar Dutra. "Do cathedral glasses flow?" *American*

Journal of Physics. Vol. 66 # 5, May 1998, pp. 392-395. (cf. articles by Pasachoff and Zanotto [March 1999]).

Zanotto, Edgar Dutra; Gupta, Prabhat K. "Do cathedral glasses flow? – Additional remarks" *American Journal of Physics*. Vol. 67 # 3, March 1999, pp. 260-262.

Zhigneiw, B.; et al. *International Journal of Immunopathology and Pharmacolog*y. 1992, 5(1), pp. 13-21.

Zidenberg-Cherr, S. K.; et al. (Dreosti, I. E., ed.) *Trace Elements, Micronutrients and Free Radicals*. 1992, Totowa, NJ: Humana Press, pp. 107-127.

REFERENCES FOR ADDITIONAL STUDY

Behe, Michael J. (1996). *Darwin's black box, The biochemical challenge to evolution.* New York: Free Press.

Cook, Melvin A. (1966). *Prehistory and Earth models.* London: Max Parrish and Co. Ltd.

Dillow, Joseph C. (1982). *The waters above: Earth's antediluvian vapor canopy.* Chicago, IL: Moody.

Horgan, John (1996). *The end of science: Facing the limits of science on the twilight of the scientific age.* Reading, MA: Addison-Wesley.

Johnson, Phillip E. (1993). *Darwin on trial.* Downers Grove, IL: Intervarsity Press.

Johnson, Phillip E. (1997). *Defeating darwinism: By opening minds.* Downers Grove, IL: Intervarsity Press.

Johnson, Phillip E. (1998). *Reason in the balance: The case against naturalism in science, law and education.* Downers Grove, IL: Intervarsity Press.

Johnson, Phillip E. (2000). *The wedge of truth: Splitting the*

Foundations of Naturalism. Downers Grove, IL: Intervarsity Press.

Morris, Henry M. (1966). *Studies in the Bible and science.* Grand Rapids, MI: Baker Book House.

REFERENCES ON HYPERBARIC MEDICINE

Davis, Jefferson C.; Hunt, Thomas K. (1977). *Hyperbaric oxygen therapy*. Bethesda, MD: Undersea Medical Society Inc.

Davis, Jefferson C.; Hunt, Thomas K. Editors. (1988). *Problem wounds.* New York: Elsevier Science Publishing Co. Inc.

Kindwall, Eric P. (editor). (1994). *Hyperbaric medicine practice.* Flagstaff, AZ: Best Publications.

JOURNALS RELATING TO HYPERBARIC MEDICINE

Hyperbaric Oxygen Review. Publisher: Undersea Medical Society (1980-1986).

Journal of Hyperbaric Medicine. Publisher: Undersea Medical Society (1986-1993).

Undersea Biomedical Research. Publisher: Undersea Medical Society (1974-1993).

Undersea and Hyperbaric Medicine. Publisher: Undersea Medical Society (1993-present).

ADDITIONAL REFERENCES ON TIDES

Darwin, George Howard. (1962). *The tides, And kindred phenomena in the solar system.* San Francisco, CA: W. H. Freeman and Company.

Kelvin, William Thomson (Lord). (1891). *Popular lectures and addresses.* Vol. III, New York: Macmillan and Company, pp.

139-227.

SUGGESTED READINGS ON HEALTH MATTERS

Atkins, Robert C. (MD). (1998). *Dr. Atkins' vita-nutrient solution: Nature's answer to drugs*. New York: Simon & Schuster.

I purchased this volume in late 1999 and decided to study the scientific articles that he cited before I adopted any of his suggestions. At that time, I was serving as a professor at Rose State College in the Engineering-Science division. I ordered copies of the articles that he cited, and I finished studying about 75% of the articles (January 2000). I found that every claim that he made (from the articles) was in accordance with the article. At that time, I decided to adopt his ideas. After I adopted his ideas, I saw an overall improvement in my health.

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ABOUT THE AUTHOR

Marion R. Fox was born in 1943 in Sayre, Oklahoma. He was married to Cynthia Kay (Hartman) Fox (deceased – 2021), they have three children: Brent, Marcey, Melanie, seven granddaughters, two grandsons, one great-granddaughter, and one great-grandson. Marion married Linda (Miller) Mayhue in 2022. He graduated from Oklahoma State University (baccalaureate and doctorate degrees) and The University of Illinois Champaign-Urbana (master's degree). In addition, he has attended Sayre Jr. College (Associate of Science degree),[388] Southwestern Oklahoma State University, Oklahoma Christian University, Rose State College, East Carolina University, Westbrook College, the University of Texas, and Oklahoma University. He has completed nine college majors and two minors.

Marion began preaching the gospel in 1970 with all his local preaching being in Oklahoma. He is a graduate of the Elk City School of Preaching (Elk City, Oklahoma). He has been with the Barnes congregation in Oklahoma City since 1978 where he served as a preacher until 2005. To reduce his workload, in 2005 he resigned as local preacher to serve as one of the elders and continue as director of the Oklahoma City School of Biblical Studies. Presently, he serves as a preacher for the Barnes congregation and director of the school.

He has taught in seven preacher-training schools. He has held gospel meetings and preached by appointment in fourteen other states. He lectured, at two state universities in Yaroslavl, Russia on apologetics. Marion debated (with four different professors) on the existence of God at the state university in Yaroslavl, Russia. He also lectured on apologetics and the work of the Holy Spirit in England. He has also preached in both Jamaica and Ghana. He has engaged in nine oral debates and three written debates. He

[388] Sayre Jr. College is now a branch campus for Southwestern Oklahoma State University.

holds seminars on the Biblical Flood, the work of the Holy Spirit, and other particular topics.

Marion is also a retired college professor (having taught engineering technology [electronic and mechanical], electrical engineering, physics, mathematics, Boolean algebra, and computer programming). He has also worked in industry both as an electronic technician and an electrical engineer (working in audio-visual systems, computer systems, avionics, radar, RF systems, and ILS systems). He taught for six years as a professor of electronic engineering technology and director of the technology division at Sayre Jr. College (Sayre, Oklahoma). Marion also taught for 24 ½ years at Rose State College (Midwest City, Oklahoma) as a professor of electronic engineering technology, applied physics, mathematics (algebra, trigonometry, calculus, Fourier series/transforms, and Laplace transforms), and mechanical engineering technology. He also taught for 8 years at Oklahoma University as an adjunct professor teaching medical physics and applied mathematics at the OU Health-Science center (Oklahoma City). He has taught for 19 years at the FAA Academy (Oklahoma City, Oklahoma) – teaching Radar concepts, ILS concepts, Mark I System maintenance, VOR-TAC concepts, and applied mathematics to technicians and engineers.

Link to You-tube Classes from This Book

https://www.youtube.com/playlist?list=PLfxAUOE9UIs_9wduNboDtDEqS35Ds7gpb

This class was from an earlier iteration of the 2nd edition of this book.