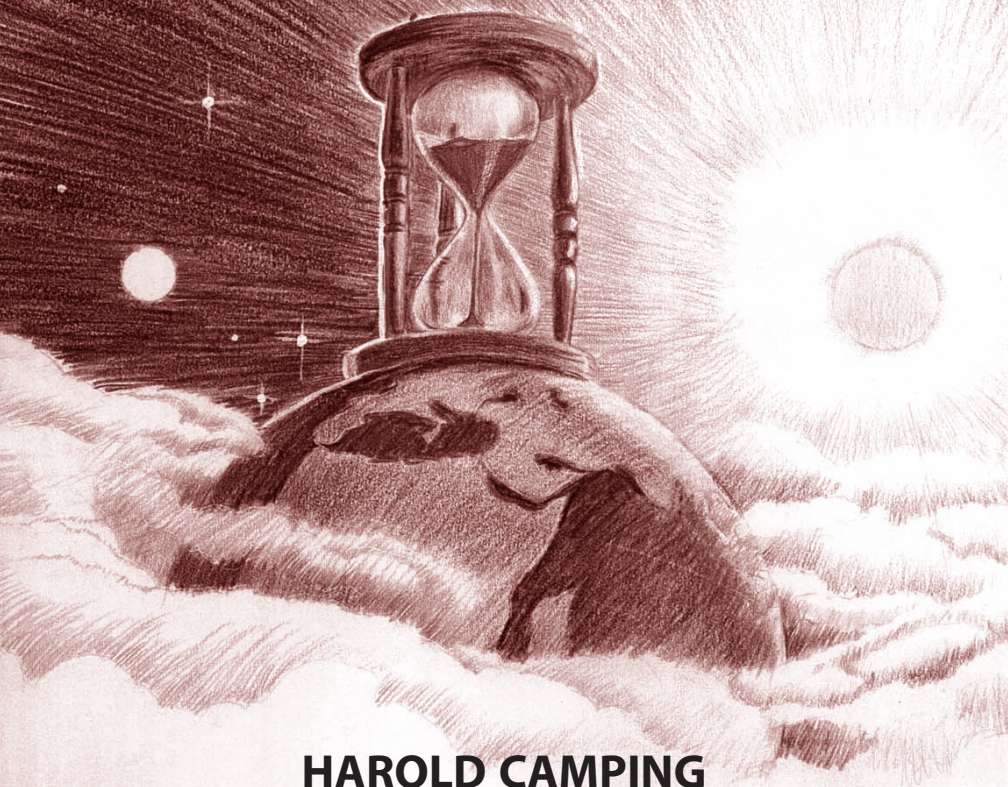
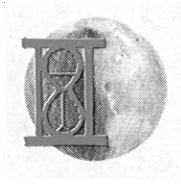


ADAM WHEN?

A Biblical Solution to
the Timetable of Mankind



HAROLD CAMPING



ADAM WHEN? **A Biblical Solution to the Timetable of Mankind**

Can we know, with complete accuracy, the timetable of the past, all the way back to Adam and the creation of the earth? This book presumes to do so, utilizing the very safe principle that the Bible is infallible in all that it says. Once the Bible is properly understood, it becomes a fountainhead of truth which can help dramatically in our understanding many puzzling and often seemingly unsolvable mysteries in the scientific evidence.

The Bible not only agrees with the evidence produced by the scientist, but actually helps us to interpret phenomena such as the paucity of elements in ocean solution and the scarcity of ocean floor sediments. It shows us that the creation date was 11,013 B.C., the flood date 4990 B.C., and that the continental division must have occurred about 3153 B.C.

Moreover, by inter-relating the scientific data with that of the Bible, we discover that the pre-flood climate was perhaps 10-15°F. warmer than today, while the immediate post-flood climate was 10-15°F. cooler than today, thus offering a reason for the onset of the Ice Age. Scripture also suggests why written history is only 5000 years old and helps us to see how man and animals are found on every continent.

May this book encourage further research into the marvelous reservoir of truth which is the Bible.

Mr. Harold Camping received his B.S. in Civil Engineering in 1942 from the University of California. In his first publication, *Feed My Sheep*, Mr. Camping deals with the fall of Lucifer and the entrance of sin into the world, and he develops a Biblical directive of the believer's task in a world enslaved by Satan. He is host of the "Open Forum," an anonymous, live, call-in program which is heard on Family Radio stations weekdays, 8:30-10:00 p.m. Eastern time/5:30-7:00 Pacific time. If you have questions about your salvation or the Bible, you may call Mr. Camping at 1-800-322-5385.

Preface

An ever-abiding concern of the Christian is the threat of Biblical unbelief creeping into the church. This has been a persistent danger throughout history; but the problem is more acute today than ever before. This is due in part to the increasing acceptance of the conclusions of scientists rather than those of the Bible in matters relating to the earth's antiquity.

It must be clearly understood that there is nothing in the Bible that could throw doubt on its integrity. That is impossible in view of the perfect activity of the Holy Spirit in the preparation of the Holy Canon. But man is faulty, and he is becoming increasingly convinced that he can solve every problem by himself without help from the Bible. Because he has covered himself with glory as a result of his successful conquests in the machine age and then the computer and space ages, he has begun to believe that he can speak authoritatively about the origins of man and the universe. He believes he can do this without help from the Bible, which he believes has been proven to be unreliable on these subjects.

Unfortunately, the fallacious conclusions of some Christians concerning an understanding of Genesis has contributed to the problem. When Ussher, for example, concluded that the date of Adam was 4004 B.C. and that the date of the flood was 2349 B.C., he did much to undermine the confidence of the marginal believer in the Word. Written history goes without pause back to about 3000 B.C. and, therefore, the flood must have been earlier than that.

Moreover, the lack of a satisfactory explanation of the genealogies of Genesis 5 and 11 has cast doubt on the reliability of these early chapters of the Bible and has further encouraged the acceptance of secular conclusions that relate to the earliest history of the earth. This has served to widen the gulf between the sacred and secular until today many are ready to believe that the first eleven chapters of Genesis are myth, or allegory, or at best written as a poem of some kind. In any case, many believe Genesis cannot be trusted to provide a serious contribution to an understanding of origins. Thus, mistrust of the Book of Genesis can and has fostered a mistrust of the entire Bible, and once confidence in Scripture is gone, unbelief and apostasy are sure to follow.

With this concern in mind, together with a deep personal conviction that nothing is accidental or coincidental in the Bible, I have seriously searched for the Biblical answer to the origins of the world. I believe with all my heart that solutions to Bible enigmas must be found in the Bible itself, for God surely did not give us the detailed facts in the Bible in order to confuse us. It is true that He wrote in such a way that unsaved men apart from the Holy Spirit would be unable to find truth. This is attested to by Christ's statement concerning His use of parables, but there is nothing in the Bible that is written to confuse or mislead the Christian. He may have to wait awhile for the Holy Spirit to lead him into truth, but he need not suppose for a moment that any one part of the Bible is less trustworthy or less authoritative than any other part.

As I have studied the Bible, I have discovered truths that have given me a great deal of insight into previously unsolvable problems. These truths have demonstrated the remarkable consistency of the Bible, and they have vindicated the Bible's integrity, even when it speaks on scientific subjects.

An important truth the Holy Spirit led me to was the solution of the genealogies of Genesis 5 and 11. When I first suspected I had been led to the proper understanding of these chapters, I was, of course, quite thrilled. Discovering truth is a wonderful experience. But how would this Biblical chronology relate to the evidence of the archaeologist and others who speak in any manner about the origins and history of man and the world? In this book, I have endeavored to answer that question by looking fairly at some of the secular evidence available and showing how this is in harmony with the plain statements of the Bible. Obviously, this cannot be an exhaustive study. Let it be merely an example of the discoveries that can be made when we accept God's Word as completely authoritative and trustworthy in every area of knowledge.

Every study must begin with certain basic assumptions. Let me say very forthrightly that the basic assumption underlying this book is that the Bible is the authoritative Word of God and is just as accurate and trustworthy when it speaks on subjects covered by the scientist, historian, or psychologist as when it speaks in areas covering spiritual relationships. My hope is that this book will encourage many to remain firm in the faith regardless of the interesting and intriguing conclusions of those who have so much of this world's knowledge but who have reservations concerning the truth of God's Word.

I would at this time like to especially recognize Dr. Jack Finegan, Dean of the Pacific School of Religion. Because of his generous kindness, I was given unrestricted access to the Palestinian Library. Without such a favor, it would have been well-nigh impossible to do the required research in connection with the archaeological records.

This book was first published in 1974. Since that time portions of it have been reprinted as separate publications. For example, the chapter "Let the Oceans Speak" was published some years later. This was also true of Chapter 3 which is entitled "Guideposts in the Sacred Text". It was published under the heading "The Biblical Calendar of History". Additionally some of the chapters were republished in such books as "1994?" and "Are You Ready?".

However, because of the many requests for copies of the original publication, it is herewith made available.

It might be noted that after its initial publication 26 years ago, no evidence has been forthcoming that shows errors concerning the concepts set forth in the original publication. For example, after 26 years of continuing in depth serious study of the Bible by the author, as well as many other Bible students, has any Biblical evidence been developed that faults the conclusion that creation occurred in 11013 B.C. when dated by our present Gregorian calendar. Likewise, in the knowledge of the author, no scientific evidence has come forth that negate the conclusions offered in this book concerning such subjects as Radioactive isotope dating or archeological evidence concerning the history of Egypt. Fact is, an increasing amount of evidence is being produced which shows the past or present evidence of much water on the moon and on many of the planets of our solar system. Thus is increasing cooperation of the conclusion set forth on page 182 that a great part of the flood waters that totally covered the face of the whole earth in Noah's day came as a result of the earth together with other parts of our solar system passing through a deep space rain cloud.

In this volume with two exceptions the Bible citations have been quoted from the King James Bible. The verses found in Proverbs 8:27 and Acts 13:19, 20 are more accurately translated in the Revised Standard Version than in the King James Version.

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Introduction

There are serious discussions taking place on many levels of Christian thinking. These discussions include the timetable of the creation of man and the world, together with the problem of the scope and nature of the Noachian flood. These are very important discussions because our conclusions can affect the Christian's relationship to the Bible, and therefore, to God Himself.

All are curious about man's early beginnings. Throughout the ages man has searched for knowledge concerning his genesis, perhaps feeling that knowledge of his past will help him to understand the present and supply guidelines concerning the future. The Christian in particular is interested in the lineage of man because the Bible, his guidebook for life, has much to say about it and because it is clearly related to the revelation of God's Son, Jesus Christ.

The Christian allows the Bible to do more than inform him. The Christian lets God's Word shape his thinking in all areas of his life. The Christian carefully looks at each piece of news from the world round about him and compares it with the revealed truth of the Scriptures so that he may determine the validity of the news. He also wants to be sure that the conclusions of others do not detract from his faith in the trustworthiness of God's Word.

While the Bible begins with the dawn of time and history, I wonder why it does not give, more clearly, a complete chronology so that we might know the exact age of the human race. Chapters 5 and 11 of Genesis point to a possible chronology. Is there Biblical evidence that might give us a clue to the proper understanding of these two chapters? If the age of man can be conclusively established, can this help us to understand the present condition in which man now finds himself? Will a knowledge of Adam's date in history provide a better meshing of the evidence of science with the Biblical facts of the origin of the earth and man, the fall of man, the Tower of Babel, the flood and the Exodus? If we can establish the age of man, will we receive a new appreciation of the marvelous accuracy and authority of the Bible?

These are some of the questions I will attempt to answer with only one desire, and that is to find truth as it is revealed in God's Word. This

book is an attempt to press on towards a better understanding of the earliest history of man and the world. In so doing we shall discover that the numbers in the Bible concerned with man's earliest history are exceedingly accurate and understandable. I trust that we shall also receive new insights into the wonderful help the Bible offers to those who seek to interpret archaeological evidence concerned with man's early beginnings.

At the start of this search for truth it is important that we recognize that we are hampered by our limitations in trying to find the whole truth. First, we are not perfect creatures. We have the imperfections of a mind and body sadly damaged by the results of sin. Our comprehension today is faulty in every area in contrast to the perfect understanding we shall have one day. For now we see through a glass darkly, but then we shall see our Savior face to face. The Bible promises us that the Holy Spirit will lead us into all truth; but we are not always open to His leading. Our own ideas will not always give way to the truth offered by the Holy Spirit. Also, there are certain aspects of God's Word that are purposely veiled to the reader in God's scheme of revelation. The extent of the veiling, or unveiling, depends on the activity of the Holy Spirit as He opens our eyes to see God's meaning.

The outstanding example of such "veiling" is the revelation of the Savior. The plan of salvation remains unrevealed to the non-Christian, who rejects Christ. The Apostle Paul wrote in II Corinthians 4:3, "But if our gospel be hid, it is hid to them that are lost." This veiling is further emphasized by Christ's words in Matthew 13:13-15:

Therefore speak I to them in parables: because they seeing see not; and hearing they hear not, neither do they understand. And in them is fulfilled the prophecy of Esaias, which saith, By hearing ye shall hear, and shall not understand; and seeing ye shall see, and shall not perceive: For this people's heart is waxed gross, and their ears are dull of hearing, and their eyes they have closed; lest at any time they should see with their eyes, and hear with their ears, and should understand with their heart, and should be converted, and I should heal them.

To the natural man, the Bible is a mixture of tradition, mythology, fallacies, and contradictions. Only when God gives him faith to believe does man see the condescending love of God and the abundant provision He has made for sinful man to be reconciled to Him.

To the Christian, too, certain aspects of God's Word are veiled. A good illustration of this veiling is the inclusion of the Gentiles in the body of Christ. The Gentiles were always meant to be fellow-heirs, members of the same body, and partakers of the promise in Christ Jesus through the Gospel. The New Testament declares in Ephesians 3:3-6:

How that by revelation he made known unto me the mystery; (as I wrote afore in few words, Whereby, when ye read, ye may understand my knowledge in the mystery of Christ) Which in other ages was not made known unto the sons of men, as it is now revealed unto his holy apostles and prophets by the Spirit; That the Gentiles should be fellowheirs, and of the same body, and partakers of his promise in Christ by the gospel.

There is abundant reference in the Old Testament to the inclusion of the Gentiles in the body of Christ. One has only to read these passages in the book of the prophet Isaiah.

Isaiah 42:6: I the LORD have called thee in righteousness, and will hold thine hand, and will keep thee, and give thee for a covenant of the people, for a light of the Gentiles.

Isaiah 49:6: And he said, It is a light thing that thou shouldest be my servant to raise up the tribes of Jacob, and to restore the preserved of Israel: I will also give thee for a light to the Gentiles, that thou mayest be my salvation unto the end of the earth.

Isaiah 55:5: Behold, thou shalt call a nation that thou knowest not, and nations that knew not thee shall run unto thee because of the LORD thy God, and for the Holy One of Israel; for he hath glorified thee.

Yet in spite of the large number of references to this truth in the Old Testament and the glimmerings offered by the conversion of such Gentiles as Rahab and Ruth, and God's concern for the Gentile city Ninevah, the Holy Spirit did not make this truth clear until the days of the apostles. The Bible says in Jeremiah 23:20:

The anger of the LORD shall not return, until he have executed, and till he have performed the thoughts of his heart: in the latter days ye shall consider it perfectly.

Thus, it seems that God not only veils His truth, but He also has a specific timetable to reveal His truth. With this in mind, we can now re-examine the record of the ages to find truth for the modern age.

Chapter 1

Can the Bible be Trusted?

Before we begin to analyze the Biblical genealogical record in an attempt to understand the earth's timetable and the date of man's origin, we must examine the question of the reliability of Scriptures. All Christians agree that the Bible is trustworthy when it addresses the question of salvation, but there is not always such confidence in the Bible when it speaks in the area of scientific or historical truth. The opening chapters of Genesis are especially suspect to many insofar as historical and scientific accuracy are concerned.

Increasingly in recent years, geologists, paleontologists, anthropologists, and those committed to other scientific disciplines have insisted that their research is producing more and more evidence to prove that the concept of long periods of time is the only valid rationale for explaining the existence and condition of our present world. They also conclude that the idea of a universal, earth-inundating flood must be discarded.

Are these scientists correct? Must we reread the Bible from a point of view that is different from what we have done in the past? Were our forefathers misguided in believing the six days of creation were six literal days as the Bible evidently teaches? Were they misled into believing that the Bible tells of a literal flood that covered the entire surface of the earth and rose to fifteen cubits above the highest mountain?

Unfortunately, the great majority of those attempting to draw scientific conclusions from evidence being discovered are unsaved men who have no regard for nor any understanding of the Bible. This is true simply because a great majority of all the people in the world are unsaved, including scientists. But the problem of Biblical unbelief arises because a small but significant number of those who accept these conclusions are scientists who are born-again Christians.

Their accommodation of these conclusions, often speculations such as theistic evolution, has encouraged their acceptance by an ever-increasing number of non- or partially-scientifically oriented

Christians. I must confess that some years ago, I too, held the position that the Bible allowed for six long creative periods.

Many serious Christians, however, sense that there is something critically amiss. They may not be able to adequately express their fears in this regard, but they are nevertheless uneasy. Perhaps they fear that acceptance of this new scientific thought can only lead men away from the Bible rather than toward it.

A number of valid reasons may be suggested which have contributed to the development of the acute polarity of opinions concerning the earth's origins. First of all, few ministers, theologians, or laymen are educationally equipped to talk intelligently about scientific matters with physicists, geologists, and other scientists who are highly trained in their fields. Therefore, communication between the scientific world and the theological world is very poor.

Moreover, our theological posture is cast in the crucible of the Reformation. The reformers were not required to speak in any great detail about the questions raised in this discussion, which have become so vital in recent years. Thus, our ministers and teachers have not been schooled as well as they should have been to face these questions. Because they have not, none of us sitting at their feet have received adequate scriptural training. All of us have been trained to think clearly in the areas of sin, salvation, and service; but we have been given no clearly defined framework for understanding the first eleven chapters of Genesis. Therefore, even the Christian who has obtained his doctorate in a scientific field has the same Biblical training as the rest of us; he, too, is limited in his efforts to establish a framework for Biblical truth in the areas of his concern.

Thus, the polarity exists between those who sense that anything but a literal reading of the Genesis account is a direct violation of the rest of the truths of the Bible, and those who believe that the widest possible latitude must be given to the interpretation of the Genesis account in order to establish any concordance with scientific truth. Believers on each side of the question are equally sincere in their desire to find truth.

One other point might be raised. In II Peter 3 we read that in the latter days scoffers will arise who would deny the Biblical teaching of the worldwide destructive flood of Noah's day.

II Peter 3:3-7: Knowing this first, that there shall come in the last days scoffers, walking after their own lusts, And saying, Where is

the promise of his coming? for since the fathers fell asleep, all things continue as they were from the beginning of the creation. For this they willingly are ignorant of, that by the word of God the heavens were of old, and the earth standing out of the water and in the water: Whereby the world that then was, being overflowed with water, perished: But the heavens and the earth, which are now, by the same word are kept in store, reserved unto fire against the day of judgment and perdition of ungodly men.

The reason for their denial is a conscious or subconscious reluctance to accept the certainty of Christ's personal return to earth to bring judgment. Obviously, the thought of man in some form upon an old world for millions of years does make the concept of the termination of this world, perhaps within our lifetime, appear rather quaint and untenable. If God's judgment on Noah's world was not extensive and conclusive as Genesis 6 to 9 portrays, then there is serious doubt about whether the language of the Bible that relates to the forthcoming judgment upon this present world is to be taken seriously.

This problem was brought home to me vividly when I heard a prominent minister deliver a sermon in which I thought he said that the same trees which we presently see around us could be present after Christ's return. In a discussion with him afterwards, I asked him if he agreed with the statements in II Peter 3 that this world would be destroyed by fire prior to the new heavens and new earth. His reply was very enlightening. "Don't you think this language could be symbolical, and must it necessarily be understood literally?," he asked.

Upon reflecting on his answer to me, the rationale for it is easily seen: If the literal universal flood of Noah did not really happen, then the language of Genesis 6-9 must be symbolical or figurative in some sense, and possibly the language of II Peter 3 also. Then, too, all statements in the Bible that relate to Christ's coming could be symbolical. The ultimate development of such thinking could lead to a complete denial of the truth of His second coming to bring judgment.

This experience has been cited only to indicate the importance of the question under discussion and the necessity to take a clear and forthright stand.

In regards to this question, I would like to make a few general observations.

1. All of the Bible is accurate and authoritative. A modern cliché is often expressed to the effect that the Word of God was never intended to be a textbook of history, science, or psychology, and that the supreme purpose of the Bible is to reveal the Creator's wonderful redemptive plan for fallen man through Jesus Christ. This statement in itself is true, but unfortunately the impression is often left that the Bible is, therefore, less than accurate when it speaks in the areas of science or history. Thus, the authority of the Scriptures is undermined and much valuable Biblical truth is disregarded. The fact is that when the Scriptures speak in the areas of science or history, or, for that matter, in any other field of learning, they do so with exceeding great care, accuracy, and authority. There are three reasons for this: (1) these subjects are often an integral part of the plan of salvation; (2) the words and the subjects are part of God's message to man; and (3) by reason of His very nature, God is accurate when He speaks.

It appears that two events in history are perhaps especially important contributors to the present resistance to the acceptance of the entire Bible as completely authoritative and trustworthy in every detail. The first was the development of the evolutionary theories of Charles Darwin together with the uniformitarianism theories of Lyell and others. Darwin and Lyell offered systems of origins which appeared to be substantiated by much evidence from scientific research. Because their theories run counter to the teachings of the Bible, a serious question was raised regarding the trustworthiness of the Scriptures.

The second event was the uncovering of the ancient sites of Mesopotamia and Egypt. While the first archaeological effort was begun by Napoleon's Expedition in 1798, substantial digging at these old sites occurred almost simultaneously with the presentation of the theories of Darwin and Lyell. Not only were ancient cities brought to light but also their primitive libraries were unearthed. Once the languages of these bygone civilizations were deciphered, the libraries of clay tablets were read. The archaeologists, many of whom were trained as theologians, discovered many tablets that appeared to disagree with the Bible or they found little evidence that would support the Bible. So immediately the Bible was placed on the same level as that of other ancient writings. They thought the Bible was to be reckoned as one account developed by man but it was not to be regarded as any more authoritative than any other account.

The words of Sir Alan Gardiner, an archeologist of international

fame who regarded Exodus as legendary, tells very succinctly of his feelings:

I will admit that the lack of logic and imperviousness to facts shown by those who treat the book of Exodus as a good historical document soon ranged me to the other side.¹

It is true that whenever a Biblical statement was discovered to be true, it was acknowledged, but even this often was done reluctantly.

Because archaeological discovery was of such great interest to Bible scholars, the findings and conclusions of the archaeologists were read eagerly. Unfortunately, however, too few dared to reject the scientific conclusions when such conclusions ran contrary to God's Word. Even in conservative commentaries, questions are raised regarding the trustworthiness of certain parts of the Biblical record. For example, the editors of the highly esteemed *Pulpit Commentary* allow one of its writers to say:

The conclusion, therefore, seems to be that, while Scripture does not imperatively forbid the idea of a partial Deluge, science appears to require it, and, without ascribing to all the scientific objections that are urged against the universality of the Flood that importance which their authors assign to them, it may be safely affirmed that there is considerable reason for believing that the 'mabbul' which swept away the antediluvian men was confined to the region which they inhabited.²

At a time when the Biblical record was being threatened by the secular record, we entered the age of modern science. Scientists in the last several decades have covered themselves with glory as they made advances in medicine, physics, chemistry, and biological research. Among other discoveries, they found ways of dating the materials of the earth, both inorganic and organic. Their conclusion that the earth must be at least several billion years old seems to agree with the earlier findings of Darwin, Lyell, and others. Because the Bible says that God made the creation in six days several thousand years ago, these modern-day scientists have come to the same conclusion as many of the archaeologists: the Bible is untrustworthy in these areas of scientific thought.

At the same time, Christians have attempted to harmonize and explain the Biblical account in relation to the scientific evidence and conclusions. Some Christians who are scientists have decided that the Bible does not speak at all in areas of history and science; they say it

is a book only for the theologian. A statement which reflects the current position of many Christians of scientific background is found in *The Encounter Between Christianity and Science*.³ In this book, which was written and edited by leading Christians of scientific stature, the premise is set forth that the Bible is trustworthy when it speaks about God, Jesus, and salvation. They contend that since these are apparently the key subjects of the Bible, the supporting data, that is, historical and scientific data, need not be accurate. Consequently, they allege that the scientific theories of evolution and uniformitarianism cannot be studied in the light of the Bible but can be understood only in the light of God's natural revelation. In my judgment, such assumptions have led these writers to a kind of neo-orthodoxy which reminds one of the theories of Barth and Brunner. Barth and Brunner approached the Bible from a philosophical background whereas the scientists approach the Bible with the viewpoint that science is the final authority; both are offering less than the whole counsel of God.

The point is that the belief that the supporting Biblical data is not necessarily accurate and true ultimately will lead the believer away from spiritual truth. The conclusions of the writers of the book, *The Encounter Between Christianity and Science*, show this trend:

In conclusion, then, the writer takes the following position:

(1) Organic evolution has been verified with sufficient evidence to justify scientific acceptance.

(2) Acceptance of organic evolution does not negate creation or the supernatural. Rather, organic evolution is a natural process accomplishing a supernatural purpose.⁴

It seems to me that such conclusions effectively destroy the whole purpose of the Bible. Without an historical Adam and an historical confrontation between Adam and Satan, the purpose of Christ's coming is put into question. Furthermore, what Scripture can anyone offer to support such conclusions? In my judgment, these conclusions offer the scientist maximum latitude in examining scientific evidence, but this in no sense makes these conclusions true. For example, it can be shown that the Bible has much to say in the area of evolutionary theory. I trust that this volume will show how wonderfully God, in His Word, helps us to understand the chronology of mankind, and this chronology impinges directly upon the conclusions which are derived from the secular evidence.

For too long many well-meaning Christians have yielded to the temptation to deny the relevancy and wisdom of the Scriptures which relate to many fields of learning. We must accept all of the Bible as totally accurate and authoritative.

2. Whenever we have to force a verse or struggle with a verse to make it fit into our idea of what the Word says or will allow, we are on very dangerous ground. One of the most fundamental concepts of Bible exegesis is to let the Bible be its own interpreter. Some subjects are mentioned in more parts of the Bible than other subjects, and can be interpreted in more ways than others, depending upon the context, but if the Bible does not allow for alternatives, then none can be taken. The Bible must set the limits on interpretation. Unless Biblical evidence of a parallel nature, including but not limited to, the context of the verse itself allows us to do so, we may not take liberties to try to understand a verse. What we do not understand, we must simply accept by faith. Later, either in this life or in the life beyond the grave, the Holy Spirit will clarify the verse.

Let us consider, for example, the findings of world-renowned archaeologist Sir Leonard Wooley concerning the Noachian Flood.⁵ After examining evidence obtained during twelve years of excavating at the ancient site of Ur of the Chaldees, Sir Leonard expressed the opinion that the flood of Noah's day was limited to the Mesopotamia Valley.

The archaeologist had found indisputable proof of a major flood. A deposit of silt to a maximum depth of eleven feet was discovered with evidence of human dwellings below the level of the silt. In his findings, Sir Leonard stated that in his opinion the flood recorded in the Book of Genesis had extended across the flat, low-lying land of Mesopotamia to a depth of twenty-five feet and over an area three hundred miles in length and a hundred miles in width.

Viewed under the searchlight of God's Word, however, the conclusions of this eminent authority are invalid. It can be shown that the flood of Noah's day must have been universal if the Scriptures mean what they say. This fact is clearly set forth in the Bible. When we look at the Scriptures which relate to the flood, we will be amazed at the clear language and the repeated emphasis of universality that God uses to describe this flood.

The Bible uses language such as the following.

Genesis 6:7: And the LORD said, I will destroy man whom I have

created from the face of the earth; both man, and beast, and the creeping thing, and the fowls of the air; for it repenteth me that I have made them.

Genesis 6:13: And God said unto Noah, The end of all flesh is come before me; for the earth is filled with violence through them; and, behold, I will destroy them with the earth.

Genesis 6:17: And, behold, I, even I, do bring a flood of waters upon the earth, to destroy all flesh, wherein is the breath of life, from under heaven; and every thing that is in the earth shall die.

Genesis 7:4: For yet seven days, and I will cause it to rain upon the earth forty days and forty nights; and every living substance that I have made will I destroy from off the face of the earth.

Genesis 7:19-23: And the waters prevailed exceedingly upon the earth; and all the high hills, that were under the whole heaven, were covered. Fifteen cubits upward did the waters prevail; and the mountains were covered. And all flesh died that moved upon the earth, both of fowl, and of cattle, and of beast, and of every creeping thing that creepeth upon the earth, and every man: All in whose nostrils was the breath of life, of all that was in the dry land, died. And every living substance was destroyed which was upon the face of the ground, both man, and cattle, and the creeping things, and the fowl of the heaven; and they were destroyed from the earth: and Noah only remained alive, and they that were with him in the ark.

Genesis 8:5: And the waters decreased continually until the tenth month: in the tenth month, on the first day of the month, were the tops of the mountains seen.

Genesis 8:8-9: Also he sent forth a dove from him, to see if the waters were abated from off the face of the ground; But the dove found no rest for the sole of her foot, and she returned unto him into the ark, for the waters were on the face of the whole earth: then he put forth his hand, and took her, and pulled her in unto him into the ark.

Genesis 8:21: And the LORD smelled a sweet savour; and the LORD said in his heart, I will not again curse the ground any more for man's sake; for the imagination of man's heart is evil from his youth; neither will I again smite any more every thing living, as I have done.

Genesis 9:11: And I will establish my covenant with you; neither shall all flesh be cut off any more by the waters of a flood; neither shall there any more be a flood to destroy the earth.

Genesis 9:15 And I will remember my covenant, which is between me and you and every living creature of all flesh; and the waters shall no more become a flood to destroy all flesh.

Could words be more explicit or exact to indicate the universal character of the flood, from the standpoint of the destruction of all flesh and the destruction of the entire face of the earth, than the words used in the Genesis account? To question such positive and clear-cut statements is to impugn the authority of God's Word. Few events in history are as clearly delineated in the Scriptures as the flood and inundation of the earth during Noah's day. Therefore, we may not assume any different conclusion than that the flood literally happened. Moreover, the parallel passages in the Bible give no suggestions that these verses are to be taken other than literally; actually, they reinforce the truth of the nature and extent of the flood (II Peter 3:5-7, Psalm 104:6-9).

In the light of the Biblical record of a deluge of cataclysmic proportions, we must carefully appraise many of the conclusions of geologists, anthropologists, and paleontologists of our day. Such men of science frequently base their conclusions on the premise that all change since the beginning of time has continued in a uniform and noncatastrophic fashion. This is an assumption that the Christian cannot accept since all archaeological findings must be examined under the searchlight of God's clear-cut statement that the whole earth was destroyed by a flood in one period of history. In fact, the Holy Spirit contends with the premise of uniformity in II Peter 3:3-6:

Knowing this first, that there shall come in the last days scoffers, walking after their own lusts, And saying, Where is the promise of his coming? for since the fathers fell asleep, all things continue as they were from the beginning of the creation. For this they willingly are ignorant of, that by the word of God the heavens were of old, and the earth standing out of the water and in the water: Whereby the world that then was, being overflowed with water, perished.

3. Scientific conclusions regarding the earth's origins are often based on hypothesis rather than fact.

We often receive the impression that the theory set forth by many scientists that the origins of the world required long periods of time is the only valid one due to an abundance of unquestionable evidence. Almost every article on this subject written for popular consumption appears to say that the evidence for the conclusion is quite free from uncertainty and the supporting evidence is amenable only to that conclusion. However, we find that much of the evidence is fragmentary when we read what scientists write to each other in scientific journals such as the *American Journal of Science*. We notice how carefully they indicate the assumptions and hypothesis that they have adopted to arrive at the theories they offer, and how carefully they state the exceptions and problems that remain which weaken their conclusions. In other words, they understand that their conclusions must be tentative and subject to radical change if necessary because of the paucity of available data and the sometimes speculative nature of some of their basic assumptions.

Unfortunately, the layman is seldom given information regarding the tenuous nature of many of these conclusions. In addition, relevant statements of the Bible are normally not used in the evaluation of the evidence that is being studied.

The Biblical account of the days of creation must be recognized before any scientific evidence concerned with origins can be evaluated. Does the Bible suggest or permit long periods of time as a valid option to that of six solar days? The Biblical record of the first day is given in Genesis 1:3-5:

And God said, Let there be light: and there was light. And God saw the light, that it was good: and God divided the light from the darkness. And God called the light Day, and the darkness he called Night. And the evening and the morning were the first day.

The first day appropriately began with the words “and God said,” even as each of the other five days began with the same words. Let us assume for the moment that the first day was a long period of time, say, one million years. This appears to be a valid assumption since the Bible sometimes uses the words “day” or yom to describe an activity that lasts more than a solar day. Genesis 2:4, for example, says:

These are the generations of the heavens and of the earth when they were created, in the day that the LORD God made the earth and the heavens.

This particular day probably includes all of the events spoken of in the first chapter of Genesis or as a bare minimum the events of the second and third days. So our beginning assumption that the first day was a long period of time could have Biblical support.

Since the verse speaks of an evening and morning, the first day must have been divided into two periods, each approximately 500,000 years long. Ordinarily, the division of day and night is approximately on a 50/50 basis inasmuch as the entire Bible was written in an area of the world where this is true. However, for maximum freedom in following this discussion, the hypothetical million years could be divided on almost any basis and the argument will hold. The first was a period of light which was called day and the second a period of darkness called night. The “evening” and “morning” must be related to the “day” and “night” of the same verse. This is the logical and obvious reading of verse 5, and no other relationship is intimated.

When we look at the second and third days of creation, we should conclude that their time spans must be like day one. The statements, “And the evening and the morning were the second day,” and “And the evening and the morning were the third day” are almost identical to the statement of verse. Could we not then assume that the second and third days were of like duration to that of day one? Since the second and third days also had an evening and a morning, each must have consisted of a period of light lasting some 500,000 years and a period of darkness lasting some 500,000 years.

The first major problem soon arises, however. What happened to the plants and trees, which came into existence the third day, during the long night of half a million years? Since there were no moon nor stars, the darkness must have been total. Surely, no plant life could be sustained during this long night.

On the fourth day, God created the sun, moon, and stars. The greater light (the sun) was to rule over the day. The lesser light (the moon) was to rule over the night. Inasmuch as this, too, was a period of an evening and a morning, the fourth day, which lasted a million years in accord with our initial assumption, also must have been divided into a period of 500,000 years of light and 500,000 years of darkness. What about the sun during this 500,000 years of night? Was it shining during this long night? The obvious conclusion is that the evening and morning could have lasted only the length of a solar day. In fact, if we start again with Genesis 1:5 and recognize that each day of creation was of 24 hours duration and that the “day” of Genesis

1:5a was more specifically the light portion of the first day, we will solve all of the problems raised above.

The first three days continued 24 hours without the sun. The fourth day continued with the same rhythm but with the sun. Although the light of the first day was the substitute for the sun's light of the fourth, the earth could have been turning on its axis every 24 hours the first day even as it does today. The rhythm of 24 hours, therefore, could have been manifested in this phenomenon as well as the alternate light and dark periods of 12 hours each. Only by this understanding can harmony be provided throughout the entire first chapter of Genesis. Of the some 1480 times that the Hebrew word *yom* is used in the Bible, the preponderant usage is of that suggested above, namely, the period of time the sun is shining or the calendar day of twenty-four hours. These are the usual ways in which we use the word "day" in our ordinary speech. The concept of solar days for Genesis 1 is not only the most obvious understanding of *yom* in Genesis 1, also it is in complete harmony with the entire Bible.

Let us look a moment at the seventh day when God rested. Does the Bible support the concept that this was a long period of time? And if God's cessation from creation is to continue from the end of the six days of creation until the end of the age, does this suggest that the six days were also long periods of time? It is true that at the end of the six days God rested from his work and never again began his initial creation. But did he never more create? We read in John 5:17:

But Jesus answered them, My Father worketh hitherto, and I work.

This verse shows that God surely is not resting. We cannot conclude, then, that there is anything peculiar about the seventh day that automatically makes it longer than any other day.

Secondly, when the thought is expressed in the Bible that God rested on the seventh day, for instance, in Exodus 20:11 and Exodus 31:17, the context never implies a day longer than a solar day. God completed his initial creation, as recorded in Genesis 1, but, can we say that God does not continually create throughout history? For example, He brings new lives into existence. We read in Psalm 104:30:

Thou sendest forth thy spirit, they are created: and thou renewest the face of the earth.

And Psalm 102:18 says:

This shall be written for the generation to come: and the people which shall be created shall praise the LORD.

In both of these instances, we see God continuing His work of creation as He brings new life into being. Furthermore, dramatic acts of Jesus, such as multiplying the loaves and fish, must be considered acts of creation. Since His creative work must have continued with the birth of Cain and with the new plants that began growing each year after the initial creation, the seventh-day rest of God can be understood to have been of very short duration. Then the only logical time span for understanding this seventh day must be a solar day. This in turn reinforces the interpretation that insists on six solar days for the days of creation.

Therefore, we see that the logical, harmonious way to understand the verses of Genesis, in the language of the text itself, in the context of the entire chapter, and in the context of the Bible, is to see creation as an activity continuing the equivalent time period of six days. We submit that all scientific evidence should be viewed within this framework.

4. A false system of knowledge may appear true. In many systems of thought, there appears to be much evidence within the system to indicate the validity of that system. Thus, men of high scholarship have adopted as truth many false religions. We know from God's Word that regardless of how much truth appears to be found within these religions, they must be rejected because they are not built upon the foundation of Jesus Christ. Similarly, many fine thinkers have accepted Communism as a true and enlightened politico-religious system even though we know that it is totally unacceptable because it does not begin with the infinite God and man created in the image of God.

In the same manner, the concept of long periods of time as a solution to the six days of Genesis appears to have much truth within it. We hear much about concordant dates, for example, but the whole system must be rejected unless its foundation rests squarely and unequivocally upon the Bible. The seeming internal consistency of parts of this system may be a reward that keeps scientists in pursuit, but ultimate truth can be obtained only when the foundation is trustworthy.

I recently had the privilege of spending several hours with a scientist who is a serious born-again Christian. He has much training

and experience in radioactive isotopes which are used for dating purposes. He, too, had adopted long periods of time as a valid conclusion and appeared uncertain about the universality of the flood. I must confess that I felt quite uneasy during our discussion because I sensed that somehow there was a tremendously important missing ingredient in our conversation. For that reason, we were not able to arrive at an agreement, even though as fellow born-again Christians we ought to finally find the same truth.

In analyzing my feelings, I discovered that I felt much like I did when I visited the Mystery Spot in Santa Cruz, California. This is a spot on the side of a hill which does not appear to have the usual direction of the force of gravity, or at least the owners make this declaration. On this property, water apparently runs uphill, people often feel ill, water appears to flow uphill, and many other curious phenomena are apparent. This is achieved by removing any known plane of reference. A cabin, surrounded by an outside wall, was constructed, and all normally horizontal planes, such as floors and ceilings, were constructed to slope, and all normally vertical planes and lines, such as walls, door jambs, and window frames, were constructed so they are not vertical. Obviously, a visitor in this cabin tries to reconcile what his eye tells him is the direction of the force of gravity, and which he relates to normally vertical or horizontal lines, with the direction of the force of gravity that he feels in his own body. This produces a conflict which sometimes makes him ill or uneasy.

In other words, a system of truth has been developed on the side of this mountain which appears quite cogent in many respects, but is totally erroneous in relation to the true plan of reference which can be found when one leaves this spot. Without the missing ingredient of a true plane of reference, apparent truth poses as real truth.

After I left the scientist, I read again the Biblical accounts of the flood, Psalm 104, and other passages. True relief came to me when I read in Hebrews 11:3:

Through faith we understand that the worlds were framed by the word of God, so that things which are seen were not made of things which do appear.

The missing ingredient in our discussion was faith in the plain teachings of the Bible. This is the foundation that must underlie all scientific inquiry if we are to find truth. When Abraham was told to sacrifice his son, Isaac, the command appeared ridiculous. If he killed

his son, it would negate the promises God had given to him: that he would be the father of a multitude of nations and that in his seed all of the nations would be blessed. But Abraham believed that in spite of these apparent inconsistencies God should be obeyed. He obeyed because he had implicit trust in God. This is faith. Faith is the element that pervades all aspects of Biblical knowledge and makes the difference between human theories, which appear to be true because of internal agreement, and the Word of God, which is true because He is objectively and absolutely trustworthy.

The point at issue is not the quality or quantity of either my or my scientist friend's faith. Far be it from me to pass judgment upon another. I should be the first to cry out, "I believe, help thou my unbelief." The point at issue is that we will miss the value and significance of Scriptural truth, as it applies to all areas of our observable universe, unless we view Scriptures consistently with eyes of faith. Without faith the Bible offers no assistance in our understanding of non-Biblical evidence. This applies not only to salvation truth but also to every other area of knowledge which the Bible addresses.

Jesus emphasizes the matter of faith in His reference to His purpose for preaching in parables. Mark 4:2:

And he taught them many things by parables, and said unto them in his doctrine.

We might speculate that He did this in order to make the Gospel that He preached more easily understood, but the very reverse is the case. In Mark 4:11-12 we read:

And he said unto them, Unto you it is given to know the mystery of the kingdom of God: but unto them that are without, all these things are done in parables: That seeing they may see, and not perceive; and hearing they may hear, and not understand; lest at any time they should be converted, and their sins should be forgiven them.

The problem of the Jews was that they were looking for a Messiah who would make logical sense to them. Jesus did not logically fill their idea of what the Messiah ought to be so they rejected Him. Because they were not humbly, with repentant hearts of faith, looking to God's Word, Jesus preached in parables so that even the glimmer of truth that could have come from His Gospel was taken from them. Peter, Mary, Martha, and others, on the other hand, by faith accepted Jesus

as the Messiah. Then they were able to see the wonderful logic of God's Word. In similar fashion, Bible truths are hidden to those who look to it for truth without first humbly trusting it as God's infallible Word.

I am afraid that in the whole area of knowledge that relates to the beginning of man and the earth, we have begun to accept a system of truth that appears quite valid and has much internal consistency. Because many elements of this system of truth do not square with the Bible, the Bible appears illogical, and, therefore, is apparently not to be trusted for what it says. We forget that most of the contributions to scientific inquiry have been made by unsaved men who know nothing of faith. We must remember that only when we begin with a deep and abiding faith in the inerrancy of the Scriptures will the beautiful logic of the Bible be revealed to us. We must begin scientific inquiry with the available evidence set forth in the Biblical record, and accept the Biblical record by faith as a completely valid foundation for understanding the evidence brought in from other sources.

5. The evidence is not all in. Years ago, archaeologists insisted that in spite of the numerous Biblical references to the nation of Hittites, there could have been no such nation. Archaeological research had produced no evidence of its existence. Thus, Bible students could have concluded that the Bible was mistaken. Or perhaps the Bible was saying something different from what it appeared to say. Maybe it was to be understood only in the light of the culture of the time in which it was written. Today, we are often told that when a passage of the Bible seems to be in contradiction to scientific conclusions, that perhaps it was given to the culture of that day and has no meaning for us. Thus, the word "Hittites" could have meant one thing to the people of Moses' day and appear to mean something quite different to the Bible student a couple thousand years later. But then archaeologists discovered extensive evidence that there was a great nation of Hittites. The Bible was vindicated and now could be understood to say exactly what it had always appeared to say.

So it is with much of the present thinking regarding the origins of man. Fragmentary evidence of fossils of animals and man have been discovered. The evidence seems to indicate an antiquity of millions of years for these origins and does not show conclusively that at one time in history there was a universal flood. Thus, the language of the

Scriptures that indicates there were six days of creation several thousands of years ago and a universal flood some time later seems to require a different explanation than that of a literal understanding. But the evidence is not all in, and when the evidence is all in, the conclusions derived from the evidence must agree with the plain language of the Bible. Until the evidence is all in, we must not accept conclusions that are not in harmony with the teachings of the Bible. Since there appears to be no Biblical warrant for understanding the six days of creation and the universality of the flood in any way other than a literal fashion, we must accept this teaching by faith and patiently wait for all of the evidence to be brought.

6. May we dare trust the Bible when it speaks in areas of scientific inquiry? Did not such trust lead an earlier generation of Christians astray when they concluded that the earth was flat? It is true that scarcely a millennium ago, our forefathers considered the flat expanse of their relatively small portion of the globe (the only world they knew), and observed how unerringly the sun travels across the heavens from one end of the land to the other, and they were convinced that the earth was shaped like a table whose four ends come to a sudden halt somewhere beyond the line of ocular vision. And the sun, they concluded, was a ball of fire travelling around the flat earth.

When Christians of much earlier generations reviewed these conclusions, they agreed that the Bible supported the idea that the earth was flat and that the sun was a ball of fire. Sufficient evidence to bolster such conclusions indeed appears to be found in the Scriptures, for God's Word does refer in Psalm 59:13, to "the ends of the earth," in Isaiah 11:12 to "the four corners of the earth," in Ezekiel 7:2 to "the four corners of the land," and in Psalm 50:1 to "the rising of the sun unto the going down thereof."

However, a more comprehensive study of God's Word would have shown them that their conclusions were erroneous. A number of truths were apparently not considered in earlier days. Nowhere does the Bible state positively that the earth's configuration is flat. On the contrary, a round configuration is indicated in Isaiah 40:22:

It is he that sitteth upon the circle of the earth, and the inhabitants thereof are as grasshoppers; that stretcheth out the heavens as a curtain, and spreadeth them out as a tent to dwell in.

The Book of Job uses an interesting metonym in referring to the earth. Job 26:10:

He hath compassed the waters with bounds, until the day and night come to an end.

The word “compassed” is the same Hebrew word which is translated “circle” in Isaiah 40:22. Many other statements are found in God’s Word that suggest much more than a flat earth with a flaming ball moving across the sky, from one end of the four-cornered table to the other. The following statements clearly say something different.

Proverbs 8:27: When he prepared the heavens, I was there: when he set a compass upon the face of the depth.

Ecclesiastes 1:6: The wind goeth toward the south, and turneth about unto the north; it whirleth about continually, and the wind returneth again according to his circuits.

Job 26:7: He stretcheth out the north over the empty place, and hangeth the earth upon nothing.

Therefore, we must conclude that when all of the Biblical notices concerning the shape of the earth are considered, we cannot conclusively give its configuration. It surely does not insist in any way upon a flat earth, and there are these many statements which point to a round earth or a sphere. The secular evidence shows that the earth is a sphere in space; the Bible does not contradict and actually supports this concept. Thus, we can see how the Holy Spirit guided men to write only that which was accurate and dependable.

7. How do we regard the Bible? A minister and I were discussing the drift of the Christian community from the Word of God. As we parted, my friend declared, “After all, the Bible is not God!” As I reflected on his assertion, I began to see the serious trouble the church was in, for in this statement I believe we find evidence of the weakened spiritual condition of the church. Let us see why this is so.

Much has been written in recent months and years concerning the infallibility of the Bible. With scholarly rhetoric, those who write insist that the Bible is the Word of God and is altogether true and trustworthy when it speaks. The Bible is the final authority because it is inspired by God; it is dependable and accurate.

With all this verbalizing, one wonders if all of us really believe that the Bible is inspired. In the area of salvation, God says faith without works is dead. Thus, a man can talk at length about his vital and wonderful faith in Christ, but if his works do not show the evidence of that faith, his faith is dead. Likewise, talking about how

one accepts the infallibility of the Bible means nothing unless it translates into concrete substance when the Bible is interpreted.

For example, attention is sometimes called to the fact that the parable of the sower recorded in Matthew 13:23 is different from that recorded in Luke 8:15. The conclusion is therefore drawn that this is so because the Biblical authors interpret and apply for us the literal words of Jesus. This conclusion makes us wonder if we are then to believe that the quotations found in the Bible are not necessarily verbatim quotes? Does this mean, for example, that the seven statements of Jesus on the cross were not necessarily spoken by Jesus? Is it possible that we have only Spirit-guided interpretations of whatever words He actually spoke?

Since the Bible is its own interpreter, where do we get permission for this kind of reasoning? Where does the Bible say or suggest that the quotations found in the Bible were not actually uttered? How dare we entertain this kind of thinking!

It is true that there are times when the Bible writer, under the inspiration of the Holy Spirit, does interpret or change the wording of a statement being quoted. This is seen in the New Testament quotations of fulfilled Old Testament prophecy. However, in these cases the Bible gives ample indication that this has occurred. We have both the Old Testament record and the New Testament restatement, which can be compared to discover God's unfolding revelation as He gives additional insights into the intent and purpose of the Old Testament statement. When similar statements are recorded in slightly different fashion in each of several of the Gospels, the Bible does not say that one Gospel account is a fulfillment or a quotation from the other Gospels. Therefore, we must assume that the precise words found in each Gospel are the actual words spoken. This is readily understood if we realize the Gospel record is but a tiny fragment of all the words spoken (John 21:25). Jesus surely must have frequently repeated the parable of the sower, and each telling must have included different details, and therefore, each recorded account is slightly different from the others. God follows this rule as He describes salvation in a number of different ways in the Bible..

Similarly, the conversation between the rich young ruler and Jesus (Luke 10:25, Matthew 19:16), probably lasted several minutes. One Gospel writer presents some of his actual words and another Gospel writer gives some other of his actual words. Combining the two accounts, we have an enlarged but probably still incomplete view

of the total conversation, but the words God wanted us to know about are faithfully recorded for our perusal.

In an effort to give as much latitude as possible to an understanding of Genesis, attention is called to an apparent discrepancy between Genesis 4:26 and Exodus 6:3 (*Banner*, Jan. 21, 1972, p. 19). Genesis 4:26 declares that in the days of Enosh, man began to call on the name of *Jehovah*, while Exodus 6:3 insists that God had not made himself known by the name *Jehovah* prior to Moses' day. Therefore, the suggestion is made that Genesis 4:26 is expressed in terms of a revelation of God given at a later date.

Thus, we are led to assume that possibly men of Enosh's generation did not actually use the name *Jehovah* even though the Bible says they did. Then we must also conclude that neither did Abraham, even though the Bible quotes Abraham as saying, in Genesis 24:3:

And I will make thee swear by the LORD [Jehovah], the God of heaven, and the God of the earth, that thou shalt not take a wife unto my son of the daughters of the Canaanites, among whom I dwell.

See also Genesis 22:14, 24:7, and 24:12.

Because of this apparent discrepancy between Exodus 6:3 and the statements of the Book of Genesis, many are encouraged to call into question the veracity of the Bible.

What are we to do with this seeming contradiction? Can Exodus 6:3 be reconciled with the statements of Genesis? It can indeed if we look more closely at the Bible statement.

The name *Jehovah* is not only God's covenant name, but it is also His saving name. (Actually God's covenant is never separate from His work as Savior.) This was declared so beautifully by Jacob in Genesis 49:18:

I have waited for thy salvation, O LORD.

It is stated so well in the preamble to the Decalogue, Exodus 20:2:

I am the LORD [Jehovah] thy God, which have brought thee out of the land of Egypt, out of the house of bondage.

It is repeated in many other places in the same context, for example, Isaiah 43:3:

For I am the LORD [Jehovah] thy God, the Holy One of Israel, thy Saviour: I gave Egypt for thy ransom, Ethiopia and Seba for thee.

Significantly, we read in Genesis 22:14 that Abraham called the mount where he offered up Isaac, “Jehovah-jireh” (Jehovah will provide).

Although the name Jehovah was familiar to the ancients from the pages of Genesis, and they had some information on the saving character of God as revealed by this name, they had not personally experienced in visible fashion the salvation offered by Jehovah, their Savior. Therefore, God declares in Exodus 6:3:

And I appeared unto Abraham, unto Isaac, and unto Jacob, by the name of God Almighty, but by my name JEHOVAH was I not known to them.

And He says in verse 6:

Wherefore say unto the children of Israel, I am the LORD, and I will bring you out from under the burdens of the Egyptians, and I will rid you out of their bondage, and I will redeem you with a stretched out arm, and with great judgments.

In other words, God insists to the nation of Israel that they were going to have a personal encounter with God as Savior when He redeemed them from Egypt, the house of bondage. Then they would know Him by His covenant-saving name, Jehovah. Today, we would say, in analogous fashion, that an unbeliever does not know Christ. The unbeliever may be aware of Him; he may know many facts about Him, but until he is saved, the unbeliever does not know Him.

The statement of Genesis 4:26, that when Enosh was born men began to call on the name of Jehovah, therefore, tells us that as early as 235 years after Adam was created, mankind saw that God was the Redeemer. They were to look to Him for help. How well they understood the Messianic work of God is not disclosed, but the fact that they looked upon Him as Savior is surely indicated.

These illustrations (and many more of a similar nature could be offered), are sufficient to show the low opinion many have today of the integrity of the Word of God. No wonder we are so ready to accept the conclusions of secular science that address the question of the origins of man and the world. The Bible has lost its authority. God says, for in six days Jehovah made heaven and earth, the sea and all that

is in them, but they set this aside with a wave of the hand, almost as if it does not exist. The fact that this same truth is detailed in Genesis 1 seems to make no impression whatsoever on many of our scientists, who apparently cannot wait to adopt conclusions of their secular colleagues, regardless of how alien those conclusions are to the Bible. No wonder we have arrived at a point where even an account so carefully articulated as the Noachian Flood (Genesis Chapters 6 to 9), is set aside as so much nonsense, which is effectively what is done when we talk about a Mesopotamia Valley flood rather than a universal flood.

There are verses that may appear unsolvable. The Bible is the revelation of God. God is infinite. He is from everlasting to everlasting. Our finite minds cannot possibly begin to grasp all of the truths from the mind of God. At times we must wait for a clearer understanding, for God does have a timetable for the revealing of His Word.

Sometimes He does speak symbolically or allegorically. But invariably a careful analysis of the verses, in the context of the whole Bible, will show us how to view these verses. We must never demean or question the integrity of God's Word.

"The Bible is not God," my friend had said. The physical Bible we hold in our hand is not God (it is only paper with ink on it). But when we read the Bible it is as closely related to God as anything can be. It is the voice of God. It is the statement of His perfect will. It is the command of the King. Because it is the voice of God, it is not to be changed or altered or questioned as to its authority or veracity. Every word in the original is God's choice, even though it comes from the personality and environment of the human author. No word is accidental or coincidental.

God is a Spirit so we cannot see Him with our physical eyes. But we can see Him in His revelation, the Bible, where God tells us about Himself and His creative as well as His redemptive work. His Word is as holy as He is. His Word is to be treated with the same deference, respect, honor, and fear as God Himself. It is for good reason that His Word is called the Holy Bible.

The sin of questioning the integrity of God's Word is not an incidental sin. It is a sin of the first magnitude. God says in Exodus 20:3-5:

Thou shalt have no other gods before me. Thou shalt not make unto thee any graven image, or any likeness of any thing that is in heaven above, or that is in the earth beneath, or that is in the water under the earth: Thou shalt not bow down thyself to them, nor serve them: for I the LORD thy God am a jealous God, visiting the iniquity of the fathers upon the children unto the third and fourth generation of them that hate me.

When we put the authority of science above the authority of the Bible, we have begun to worship science. When we put the authority of a theologian above that of the Bible, we have begun to worship man's mind rather than God. These sins will bring down the wrath of God.

The ominous phrase "unto the third and fourth generation" has eternal implications of the most serious nature. God is declaring that our progeny will be cut off, that hell is in view. We are reminded of God's word to Israel in Deuteronomy 4:25-26:

When thou shalt beget children, and children's children, and ye shall have remained long in the land, and shall corrupt yourselves, and make a graven image, or the likeness of any thing, and shall do evil in the sight of the LORD thy God, to provoke him to anger: I call heaven and earth to witness against you this day, that ye shall soon utterly perish from off the land whereunto ye go over Jordan to possess it; ye shall not prolong your days upon it, but shall utterly be destroyed.

The scientist can be very helpful in our study of the Bible. The evidence found by him will never contradict Bible truth. But the conclusion of the scientist which is a result of viewing evidence in the light of his own assumptions must never be accepted unless it agrees with untempered Bible truth.

The views of a theologian may be studied and are surely helpful, but we are not to accept statements that show weakness regarding Biblical authority. We should build on theology that is absolutely true to the Bible. We should reject out of hand any ideas that suggest that the Bible is less than absolute truth, regardless of how reputable the theologian who suggests the idea may be.

What are we to do? I fear that large segments of the church have arrived at a terrible condition. God's wrath is upon us. We have sown the wind and are about to reap the whirlwind. If we do not think this

is true, watch what is happening to the thinking of our sons and our daughters, many of whom are not following in the faith of our fathers.

We are in trouble. We have sinned grievously. And when anyone sins there is only one course of action to follow, and that is to beg the Lord to show mercy as we turn from our sin.

This is not the time to defend with pious arguments our faithfulness to God's Word. This is the time to acknowledge our sin. We have impugned the Word. We have begun to worship science. We have spent too much time listening to Barth and Brunner. We have entertained the unbiblical heresies of Lever and others. No wonder theology (true Bible understanding) is almost at a standstill today.

We ought to put on sackcloth and ashes, so to speak, and cry out for mercy. Perhaps God will stay the judgment He has begun to visit upon us. We ought to repudiate and turn away from those teachings and teachers who are unknowingly leading us to the worship of other gods.

May God have mercy on us.

NOTES:

¹ Alan H. Gardiner, "Tanis and Pi-Ramesse: A Retraction," in the *Journal of Egyptian Archaeology* (London, Egypt Exploration Society, Vol. 19, 1933).

² Vol. 1, p. 121.

³ Richard H. Bube, ed., *The Encounter Between Christianity and Science*, William B. Eerdmans, 1968.

⁴ *Ibid.*, p. 168.

⁵ Sir Leonard Wooley, *Excavations at Or*, Thomas Y. Crowell Co., 1954.

Chapter 2

The Genesis Authorship

Since so much of our subject matter concerns the first book of the Pentateuch, it would be well at this point to examine the Genesis authorship. Too often, consciously or subconsciously, we allow our thoughts to dwell on the antiquity, on the primitive human instruments God used to compile it. Instead, we ought to give due recognition to the overshadowing presence of the Holy Spirit of God “who moved holy men of old” to prepare an accurate and authoritative record of earth’s beginnings for future generations.

Within the last one hundred years, a veritable gold mine of clay tablets has been found on the sites of ancient Nineveh, Babylon, Ur, and other cities of ancient Babylonia as well as in many other parts of the world. Significantly, at least a small number of these ancient tablets were concerned with subject matter very similar to that discussed in Genesis.

Thus, much ancient literature is available today that is concerned directly or indirectly with creation. Also, tablets have been discovered which deal with a flood that at one time covered the earth.

Because these ancient accounts at times bear some similarity to the Biblical account and are thought to be much earlier than the earliest books of the Bible, the assumption has often been made that the first books of the Bible are simply a restatement of the themes and details covered in these earlier secular accounts. This assumption has led men to the conclusion that the Bible is untrustworthy even as these secular accounts have been proven to be untrustworthy in many instances.

It might be well to look at some of these tablets to see the difference between them and the Bible. One creation story of man is set forth in Tablet I of the *Enuma elish* (When above). This poem was discovered by Austen H. Layard and George Smith among the ruins of the great library of King Ashurbanipal about 630 B.C. in Nineveh. Some of the lines read as follows.¹

Tablet 1

1. When above the heaven had not (yet) been named.
2. (And) below the earth had not (yet) been called by a name;
3. (When) Apsu primeval, their begetter.
4. Mummu (and Ti amat), she who gave birth to them all,
5. (Still) mingled their waters together.
6. And no pasture land had been formed (and) not (even) a reed marsh was to be seen;
7. When none of the (other) gods had been brought into being,
8. (When) they had not (yet) been called by (their) name (s, and their) destinies had not (yet) been fixed.
9. (At that time) were the gods created within them.
10. Lahmu and Lahamu came into being; they were called by (their) names.
11. Even before they had grown up (and) become tall,
12. Anshar and Kishar were created; they surpassed them (in stature).
13. They lived many days, adding years (to days).
14. Anu was their heir presumptive, the rival of his fathers;
15. Yea, Anu, his first-born, equaled Anshar.
16. And Anu begot Nudimud, his likeness.
17. Nudimud, the master of his fathers was he;
18. He was broad of understanding, wise, mighty in strength.
19. Much stronger than his grandfather, Anshar;
20. He had no rival among the gods of his brothers.

Another is recorded on a badly mutilated and weather-worn tablet of the First Babylonian Dynasty.²

1-2. (Destroyed.)

3. "What is little he shall raise to abundance;

4. The . . . of creation (?) man shall bear.
5. The goddess they called, 111
6. The help (?) of the gods, the wise Mami:
7. “Thou art the mother-womb,”
8. The creatress of mankind;
9. Create Man that he may bear the yoke,
10. That he may bear the yoke . . .
11. The . . . of creation (?) man shall bear”
12. Mintu opened her mouth
13. And said to the great gods.
14. “With me alone it is impossible to do;
15. With his help there will be Man.
16. He shall be the one who fears all the gods.
17. Clay . . . “
18. Enki opened his mouth.
19. And said to the great gods.
20. “In the month of substitution (?) and help,
21. Of the purification of the land (and) the judgment of its shepherd,
22. Let them slay a god,
23. And let the gods . . .
24. With his flesh and his blood
25. Let ninhursag mix clay.
26. God and man
27. . . . united (?) in the clay.

A third is that which was related on a tablet discovered among the ruins of the city of Ashur and dating about 800 B.C.³

1. When heaven had been separated from the earth, the distant trust twin,

2. (And) the mother of the goddesses had been brought into being;
3. When the earth had been brought forth (and) the earth had been fashioned;
4. When the destinies of heaven and earth had been fixed;
5. (When) trench and canal had been given (their) right courses,
6. (And) the banks of the Tigris and the Euphrates had been established,
7. (Then) Anu, Enlil, Shamash, (and) Ea.
8. The great gods,
9. (And) the anunnaki, the great gods
10. Seated themselves in the exalted sanctuary.
11. And recounted among themselves what had been created.
12. "Now that the destinies of heaven and earth have been fixed,
13. Trench and canal have been given their right courses.
14. The banks of the Tigris and the Euphrates
15. Have been established
16. What (else) shall we do?
17. What (else) shall we create?
18. O Anunnaki, ye great gods,
19. What (else) shall we do?
20. What (else) shall we create?"
21. The great gods who were present.
22. The Anunnaki, who fix the destinies.
23. Both (groups) of them, made answer to Enlil;
24. "In Uzumua, the bond of heaven and earth,
25. Let us slay (two) Lamga gods.
26. With their blood let us create mankind.
27. The service of the gods be their portion.
28. For all times.

29. To maintain the boundary ditch.

The above are offered as typical examples of Babylonian accounts. The conclusion of Heidel regarding a comparison between these and the Biblical account is well stated:⁴

A comparison of the Babylonian creation story with the first chapter of Genesis makes the sublime character of the latter stand out in even bolder relief. Enuma elish refers to a multitude of divinities emanating from the elementary world matter; the universe has its origin in the generation of numerous gods and goddesses personifying cosmic spaces or forces in nature, and in the orderly and purposeful arrangement of pre-existent matter; the world is not created in the biblical sense of the term but fashioned after the manner of human craftsmen; as for man, he is created with the blood of a deity that might well be called a devil among the gods, the sphere of activity assigned to man is the service of the gods. In Genesis 1:1 to 2:3, on the other hand, there stands at the very beginning one God, who is not co-united and co-existent with an eternal world-matter and who does not first develop Himself into a series of separate deities but who creates matter out of nothing and exists independently of all cosmic matter and remains one God to the end. Here the world is created by the sovereign Word of God, without recourse to all sorts of external means. God speaks, and it is done; he commands, and it stands fast. Add to this doctrine that man was created in the image of a holy and righteous God to be the lord of the earth, the air, and the sea, and we have a number of differences between Enuma elish and Genesis 1:1 to 2:3 that make all similarities shrink into utter insignificance. These exalted conceptions in the biblical account of creation give it a depth and dignity unparalleled in any cosmogony known to us from Babylonia or Assyria.

Furthermore, if we keep in mind that throughout history two kinds of men existed, we shall be able to put these secular accounts of origins and flood stories into proper perspective. On the one hand, there is the secular man, and on the other, the man of God. The secular man is spoken about in Genesis 4 as the descendant of Cain. Later, he is referred to as the descendant of Ham and Japheth, of Ishmael, of Moab and Ammon, of Esau, etc. He never receives the full truth from the Holy Spirit because he will not acknowledge the God of the Bible. His records are subject to error. He surmises and guesses at the origins

of man. Because he is human and lives amongst the men of God, he occasionally gets very close to truth. The king's lists belonging to the third millennium B.C. are typical in this sense. One list reads as follows.⁵

The Kings Before the Flood

<u>Name</u>	<u>City</u>	<u>Length of Reign</u>
A-lu-lim	NUN	28,000 years
A-la-(1)-gar	NUN	36,000 years
En-me-en-lu-an-na	Bad-tabira	43,000 years
En-me-en-gal-an-na	Bad-tabira	28,800 years
Dumuzi 'the shepherd'	Bad-tabira	36,000 years
En-Sib-zi-an-na	Larak	28,800 years
En-me-en-dur-an-na	Sippar	21,000 years
(?) Che-du	Suruspak	18,600 years

Total: 8 kings, 5 cities, 241,200 years

The flood came.

After the flood came, kingship again was sent down from on high.

Note that eight kings are listed beginning with a first king way back in antiquity and ending with a worldwide flood. This parallels the seven generations of Genesis 4 or the 10 generations of Genesis 5. It can be seen that this approaches Biblical truth, but it is altogether imperfect and untrustworthy. Obviously, as secular man's records became more complete, his records became more trustworthy. But never can they approach the perfect accuracy of the Biblical account.

In addition to secular man, there is the line of God's men. These are the descendants of Seth, of Shem, and of Abraham. The record produced by them as recorded in God's Word is the true and trustworthy record. It is on a much higher level than the secular record because God Himself was involved in its preparation. Thus, we can learn little or nothing from the early secular creation accounts for no one was able to guard the truth. The truth recorded in the Bible was guarded by God Himself.

Moses: A Man of Great Learning and Wisdom

The first five books of the Bible were written by Moses, under the guidance of the Holy Spirit. We often think of Moses as a rather primitive ancient who could not have been qualified to understand the implications of what he wrote when he prepared in final form the first books of the Bible. Let us consider, however, the consummate care God took to prepare the author of the book of beginnings for his great calling. Under the inspiration of the Holy Spirit, the martyr Stephen was led to declare, in Acts 7:20-22:

In which time Moses was born, and was exceeding fair, and nourished up in his father's house three months: And when he was cast out, Pharaoh's daughter took him up, and nourished him for her own son. And Moses was learned in all the wisdom of the Egyptians, and was mighty in words and in deeds.

Moses was indeed well prepared and qualified, under the moving of the Holy Spirit, to be author of the first books of the Bible. The Bible declares that he was instructed in all of the wisdom of the Egyptians, while the secular record shows us the advanced culture in which he was trained.

A few quotations from Margaret Murray's book, *The Splendor That Was Egypt*, should prove of interest at this point.

The education of the children, especially of the boys, was considered to be of great importance. They appear to have been sent to boarding school at the age of four, but food does not seem to have been supplied by the school, for the mothers went every day carrying bread and beer for their little sons. The subjects taught at school were chiefly reading, writing, and arithmetic. Great pains were taken that the boys would be well-trained as they were all being educated to be clerks in government offices, or priests, or artists; reading and writing were essential for these three professions, and for the government service arithmetic was of great practical value on the account of the complicated system of taxation.⁶

Though the prehistoric people erected little hovels of mud-and-brick, real building does not appear till the first dynasty. The great royal tombs of that period show that the knowledge of such building was well advanced. The bricks were made in moulds of what is now known as 'English bond' in a mortar of clay. The bricks

are as well and truly laid as any modern bricklayer could lay them, showing that the Egyptian builders had a complete mastery of material and method.⁷

The great conquests of Thothmes III brought into Egypt many craftsmen from foreign countries, and among others there seem to have been glassmakers. Glass beads, black, white, and blue, became increasingly common, but it was not until a century later that other colours were used in glassmaking.⁸

Spinning and weaving were practiced from the Badarian period, and by the time of the first dynasty the Egyptians were producing the finest linen of the ancient world.⁹

The sciences in which the Egyptians excelled were applied mathematics and medicine.¹⁰

In dealing with Egypt it is impossible to overstate the importance of the Nile, for the river is the only source of water in the whole country. Waterworks, therefore, always engaged the attention of the engineers. The great problem was how to conserve the excess water of the inundation and store it up for use in the dry season. The problem was solved in the XIIth dynasty, when that great system of dykes, canals, and sluices was instituted in the Fayum, a system which remained in use till the Roman occupation. Irrigation canals were made in other parts of Egypt, but nothing on the scale of Amonemhat III's work in the Fayum.¹¹

Astronomy again was one of the sciences which the Egyptians studied. In a country where clouds are the exception and not the rule, the study of the heavens is comparatively easy. The positions of the constellations and the courses of the planets were known.¹²

There is no record of any fear of eclipses for there are no religious services and no charms for averting the danger of the sun or moon. It would seem that the date of an eclipse was so accurately calculated that the populace knew what to expect.¹³

They undoubtedly knew a great deal of the properties of drugs, and many medical papyri are extant giving the names and uses of medicinal plants. Their medical knowledge was far in advance of medieval Europe, and their anatomical knowledge and treatises were the foundation of the Greek writings on the subject.¹⁴

All of these quotations describe Egypt from its earliest beginnings, more than 1500 years before Moses, to the days of Moses.

He, therefore, was indeed a part of a highly developed civilization of long duration.

Another significant point we might note is that Moses was quite aware of God's promise concerning his people, the Israelites. This eventually led to a forty year exile for Moses, which gave him more than adequate time to be additionally prepared for God's purpose for him. Centuries before Moses was born, God promised in Genesis 15:13-14:

And he said unto Abram, Know of a surety that thy seed shall be a stranger in a land that is not theirs, and shall serve them; and they shall afflict them four hundred years; And also that nation, whom they shall serve, will I judge: and afterward shall they come out with great substance.

This statement must have had great personal meaning for Moses. Since the patriarch Jacob and his family had entered Egypt, 390 years had passed. Only ten years remained of the 400 years named in the prophecy. The only Israelite even remotely in a position of leadership was Moses. It is no wonder that we read in Acts 7:23-25:

And when he was full forty years old, it came into his heart to visit his brethren the children of Israel. And seeing one of them suffer wrong, he defended him, and avenged him that was oppressed, and smote the Egyptian: For he supposed his brethren would have understood how that God by his hand would deliver them: but they understood not.

Moses' conclusion that he was to be a deliverer was correct; but his timetable was erroneous. Thus, instead of becoming a deliverer, he became a fugitive. Moses was forced to run for his life, and God set him to work tending sheep in the wilderness. For the next 40 years, Moses had ample time to get to know God and His all-wise purposes, His goodness, His sovereignty, His dealings with Israel, and the eventual fulfillment of His promise to Abraham.

Moses' 40-year exile may have served another very useful purpose. Man had begun to use a written language some 15 centuries earlier. The Egyptians were renowned for their skill in this field. Many of the historical events of Genesis might well have been in written form hundreds of years before Moses was born. Be that as it may, Moses was a highly skilled Egyptian scholar and while in exile, it is possible that he was already putting together much of the information we now read in the Genesis record.

Forty years in the wilderness in the company of his wise, God-fearing father-in-law, Jethro, gave Moses plenty of time to ponder, discuss, and examine all the implications of God's earlier revelations to him. When he collated and finalized the first book of the Pentateuch, we may be sure that each word and each expression he used was carefully weighed to be certain it said exactly what it ought to say.

Also, Moses knew how to describe flood conditions with accuracy. The first 40 years of his life were spent in Egypt, where the Nile overflowed its banks almost every year, and floods with their aftermath of destruction were major topics of conversation. He was, therefore, eminently qualified to describe with the utmost precision the universal flood recorded in Genesis. **Above all, however, we know that ultimately God Himself guided the hand that wrote the Genesis record in order to keep the slightest human inaccuracy from marring the truth of His Word.** Need more be said?

NOTES:

¹ Alexander, Heidel, *The Babylonian Genesis*, Second ed., The University of Chicago Press, 1951, p. 18.

² *Ibid.*, p. 67.

³ *Ibid.*, p. 68-69.

⁴ *Ibid.*, pp. 139-140.

⁵ Wooley, Sir Leonard, *Excavations at Ur*, Barnes & Noble, Inc., New York, 1954, p. 249.

⁶ *The Splendor That Was Egypt*, New York, Hawthorne Books, Inc., 1959, p. 105.

⁷ *Ibid.*, pp. 229-230.

⁸ *Ibid.*, p. 281.

⁹ *Ibid.*, p. 282.

¹⁰ *Ibid.*, p. 283.

¹¹ *Ibid.*, p. 284.

¹² *Ibid.*, p. 285.

¹³ *Ibid.*, p. 286.

¹⁴ *Ibid.*, p. 286.

Chapter 3

Guideposts in the Sacred Text

Verbal Clues to Lineage Patterns of Biblical Speech

Thus far in our study we have attempted to outline some basic attitudes and concepts which we should employ when approaching God's Word. The essence of the concepts consist of going to the Bible on its own terms, by faith, and of getting as large a perspective as possible. We showed how crucial it is to view the Bible as the Word of God (cf. Hebrew 4:12-13), to consider it to be, therefore, absolutely true, and to fully accept all its statements no matter what the subject may be. Also, we showed the necessity of considering *all* data on a given subject in order to get the whole picture. This is true whether the data is found in the Bible or in the observable universe. Conclusions that leave significant data out could only be speculation. In fact, the truths given explicitly in the Bible must be our guide for understanding implicit truths derived empirically in the world.

If we read the Bible with these thoughts in mind, will we actually discover new truth that will give us a better understanding of the Bible? Will we better understand the secular evidence that relates to Biblical truth, or will we find that secular concepts break down when they are put to the test?

Let us attempt to develop a chronology of history from the Biblical statements, approaching the Bible in the manner we have discussed. We must begin this search with the study of the genealogical record of Genesis 5 and 11. If further light could be given to arrive at a proper understanding of these important chapters, a great stride forward would be taken toward the development of a consistent statement regarding the exact date of Adam, the flood, and other phenomena of history. This in turn would greatly help in understanding and evaluating the evidence being brought by scientific discovery. Such new information and interpretation would point up anew the orthodox Christian's belief in the total accuracy and authority of the Bible, especially with regard to the early chapters of Genesis which long have been open to dispute.

Again, I must emphasize that as a fundamental starting point, one basic fact must be acknowledged as a presupposition upon which this study rests. It is that we will receive enlightenment from God's Word only when we recognize it as His infallible revelation. II Peter 1:21:

For the prophecy came not in old time by the will of man: but holy men of God spake as they were moved by the Holy Ghost.

II Timothy 3:16:

All scripture is given by inspiration of God, and is profitable for doctrine, for reproof, for correction, for instruction in righteousness.

The Bible must be accepted as God's inerrant word to man and is, therefore, entirely trustworthy.

Inspired Verbs

As we examine the genealogical record of Genesis 5 and 11, is there anything distinctive in the language pattern used that might give us a clue to the understanding of these chapters? The verses do seem very similar to each other. Although there are two that are definitely different from the others, and we will consider those in a moment, all the other genealogical notices in this chapter follow the same pattern: namely, when 'A' had lived 'x' years, he begot 'B.' For example, Genesis 5:12 says, "And Cainan lived seventy years, and begat Mahalaleel." There is no indication that Cainan gave his son the name of Mahalaleel. The passage simply says he begat Mahalaleel.

Now let us look more intently at these two passages that stand apart from the usual pattern. The first is Genesis 5:3 which records the genealogical descent of Seth from Adam. Genesis 5:3:

And Adam lived an hundred and thirty years, and begat a son in his own likeness, after his image; and called his name Seth.

Adam begat a son and called his name Seth. The second passage is verses 28 and 29, which tell us about the relationship of Lamech to Noah. Genesis 5:28-29 records:

And Lamech lived an hundred eighty and two years, and begat a son: And he called his name Noah, saying, This same shall comfort us concerning our work and toil of our hands, because of the ground which the LORD hath cursed.

Lamech begat a son and called his name Noah.

The phrase “called his name,” which is the Hebrew *qara shem*, gives us help with at least a few of the names in these chapters. A search of the Bible reveals no instance where such a phrase is used in connection with the naming of a person, where the person named was not an immediate child or was not immediately related to the person doing the naming.

Many examples might be given to show this. Genesis 21:3, “And Abraham called the name of his son that was born unto him, whom Sarah bare to him, Isaac.” Genesis 25:25, “And the first came out red, all over like an hairy garment; and they called his name Esau.” This phrase is used in describing the births of all the sons of Jacob; for example, we read in Genesis 29:32:

And Leah conceived, and bare a son, and she called his name Reuben: for she said, Surely the LORD hath looked upon my affliction; now therefore my husband will love me.

The phrase is also used in Genesis 38 where the five sons of Judah are noted in verses 3, 4, 5, 29, and 30. This particular indisputable father-son relationship is underscored in I Chronicles 2:4 by the statement, “All the sons of Judah were five.” Interestingly, the same phrase, *qara shem*, is used in Isaiah 7:14, where God prophesied that a virgin would bear a son and *call his name* Immanuel. It is used also in Genesis 5:2 where God called the man “Adam.” We know, of course, from the other Biblical data that there were no humans before Adam. From all of this evidence, we can be quite sure that wherever the clue phrase, *qara shem* occurs, we can be certain that an immediate son is being described and not a grandson or some more remote descendant.

Returning to the Genesis account with this knowledge concerning the Bible’s use of the clue phrase “called his name,” we discover in Genesis 4:25 and in Genesis 5:3 that Seth was undoubtedly an immediate son of Adam, for in both of these verses *qara shem* is used. We find, too, in Genesis 4:26:

And to Seth, to him also there was born a son; and he called his name Enos: then began men to call upon the name of the LORD.

Thus, we can know that Enosh was an immediate son of Seth. Likewise, on the same grounds we can know that Noah was the immediate son of Lamech (Genesis 5:28-29).

Thus, we may conclude on the basis of the information found in the verses cited above that when Adam was 130 years old, Seth was

born to him. When Adam was 235 years old and Seth was 105, Enosh, the grandson of Adam was born. Similarly, when Lamech was 182 years of age, Noah was born.

Noah's and Terah's Sons

Two other generations are named in the genealogical accounts of Genesis 5 and 11 which can be shown to be of an immediate father-son relationship. In neither of these is the clue phrase "called his name" used, but sufficient information is given in other Biblical references so that we can know this.

The first of these is in relationship to Noah's son, Shem. In Genesis 5:32 we read:

And Noah was five hundred years old: and Noah begat Shem, Ham, and Japheth.

We know that these must be immediate sons by the testimony of Genesis 9:18 which reads:

And the sons of Noah, that went forth of the ark, were Shem, and Ham, and Japheth: and Ham is the father of Canaan.

Genesis 7:13 states that Noah, Shem, Ham, and Japheth, together with their wives, entered the ark. We read in I Peter 3:20 that there were eight souls in the ark. These verses lead us to the inescapable conclusion that Shem was an immediate son of Noah, not a grandson or later descendant.

The other generation that can be known to represent an immediate father-son relationship is that of Terah and Abram. Genesis 11:26 declares:

And Terah lived seventy years, and begat Abram, Nahor, and Haran.

The verses which follow give additional information which points conclusively to the relationship that existed. Genesis 11:27-28 declares:

Now these are the generations of Terah: Terah begat Abram, Nahor, and Haran; and Haran begat Lot. And Haran died before his father Terah in the land of his nativity, in Ur of the Chaldees.

Verse 31 continues:

And Terah took Abram his son, and Lot the son of Haran his son's son, and Sarai his daughter in law, his son Abram's wife; and they went forth with them from Ur of the Chaldees, to go into the land of Canaan; and they came unto Haran, and dwelt there.

This language surely has reference to an immediate family relationship. Thus, Abram could only have been the son of Terah, and not his grandson or some later descendant.

Some further clarification might be helpful at this point. Although Genesis 11:26 would seem to indicate that all three of Terah's sons, Abram, Nahor, and Haran, were born when he was 70 years old, this cannot have been the case unless they were triplets. Verse 32 clearly states that Terah died in Haran at the age of 205 years. Upon his father's death, Abram left Haran at the age of 75 (Acts 7:4, Genesis 12:4). Therefore, we must conclude that Terah was actually 130 years of age at the time of Abram's birth, and that either Nahor or Haran was the oldest of the three brothers, one having been born when their father was 70. In the genealogies, Abram is probably mentioned first because he was the important figure in God's redemptive plan for man.

Returning to the sons of Noah, we are led to a similarly interesting conclusion. We find that Genesis 5:32 declares that Noah was 500 years old when he became the father of Shem, Ham, and Japheth, yet in verse 10 of Genesis 11 we are told:

These are the generations of Shem: Shem was an hundred years old, and begat Arphaxad two years after the flood.

Noah was 600 years old at the time of the flood, so Shem must have been born when Noah was 502. Since Genesis 10:21 refers to Shem, the older brother of Japheth, we know that Japheth was born when Noah was more than 502 years old. Thus, as the oldest of the three sons, Ham must have been born when Noah was 500. Therefore, we may reasonably conclude that Shem was born when his father was 502, and that he lived a further 502 years after the flood with his father as his contemporary 350 years of that time (Genesis 9:28, Genesis 11:10-11). Again, as in Abram's case, Shem's name probably appears first in the Bible record because of his place in God's great plan.

Thus far, we have established that Seth, Enosh, Noah, Shem, and Abram were all immediate sons of their fathers, named in the record of Genesis 5 and 11. We are left with the remaining names in these two

chapters. Are they immediate sons or are they later descendants? The phrase *qara shem* is not used anywhere in the Bible in connection with these names to indicate an immediate father/son relationship. Neither is there other evidence in Scripture which conclusively suggests this kind of relationship. Is there Scriptural evidence to indicate that these verses are speaking of other than a father-son relationship? There is indeed as we shall now see.

Patriarchal Periods

An analysis of the language used in Chapters 5 and 11 reveals a pattern that is unique only to these chapters. A typical passage is that of Genesis 5:15-17:

And Mahalaleel lived sixty and five years, and begat Jared: And Mahalaleel lived after he begat Jared eight hundred and thirty years, and begat sons and daughters: And all the days of Mahalaleel were eight hundred ninety and five years: and he died.

These verses set forth truth that might be written as the equation:

When “A” was “x” years old, he begat a son, “B.”

“A” then lived “y” years after he begat “B” and begat other sons and daughters.

This language pattern is used to describe men from Adam all the way to Terah, the father of Abraham. The account of Genesis 5 adds that, thus, all the days of “A” were $(x + y)$ years and he died. This was added probably because of the extreme longevity of these ancients. By this added phrase there could be no misunderstanding regarding these long life-spans.

How are we to understand these verses? Is “B” the son of “A” or is he a later descendant of “A”? The word “begat” does not help us. In some cases in the Bible it is used where unquestionably an immediate father-son relationship is in view. For example, in I Chronicles 1:34, where we read that Abraham begat Isaac. On the other hand, begat is sometimes used where a descendant later than an immediate son is in view. In Matthew 1:8, for example, we read that Joram begat Uzziah. But Ahazial, Joash, and Amaziah should come between Joram and Uzziah. Thus, in this case “begat” could have reference only to a descendant later than a son.

A casual comparison of Genesis 11:16-17 with Genesis 10:25 would seem to offer a solution. The typical language pattern of Genesis 5 and 11 is followed in Genesis 11:16-17, where we read:

And Eber lived four and thirty years, and begat Peleg: And Eber lived after he begat Peleg four hundred and thirty years, and begat sons and daughters.

And in Genesis 10:25 we find recorded:

And unto Eber were born two sons: the name of one was Peleg; for in his days was the earth divided; and his brother's name was Joktan.

Do these verses say that Peleg was an immediate son of Eber? If this is so, in Genesis 11:16-17 the word "begat" must necessarily be understood as a reference to an immediate father-son relationship. Since at first this appears to be true for Genesis 11:16-17, we would suspect that this would be true of all of the other verses of Genesis 5 and 11 which follow the same language pattern.

Yet the problem with this reasoning is that other language found in Genesis 10 indicates that the reference to "sons," as it is used in Genesis 10:25, does not at all ensure that an immediate father-son relationship is in view, i.e., that Peleg was the immediate son of Eber. In the same chapter, for example, we read in verse 31, "These are the sons of Shem, after their families, after their tongues, in their lands, after their nations." But in this verse, "sons" has reference to all of the descendants of Shem. Thus, the word "sons" does not prove that a reference is made to the immediate son of the father. It might be noted that Matthew 1:1 also illustrates this truth, for there we read, "The book of the generation of Jesus Christ, the son of David, the son of Abraham."

Moreover, when we look at Eber and Peleg more carefully, we will discover evidence that suggests very strongly that Peleg could not have been the immediate son of Eber. In Genesis 10:25 we read:

And unto Eber were born two sons: the name of one was Peleg; for in his days was the earth divided; and his brother's name was Joktan.

This statement is repeated in I Chronicles 1:19, which suggests that God appears to be calling attention to these facts as though they are of great importance. From Genesis 11:16-19 we discover that Eber begat Peleg, and Peleg begat Reu.

Genesis 11:16-19:

And Eber lived four and thirty years, and begat Peleg: And Eber lived after he begat Peleg four hundred and thirty years, and

begat sons and daughters. And Peleg lived thirty years, and begat Reu: And Peleg lived after he begat Reu two hundred and nine years, and begat sons and daughters.

Let us now assume for the moment that Peleg was an immediate son of Eber and that Reu was an immediate son of Peleg. Since according to Genesis 11:16-18, Eber was 34 years old when Peleg was born and presumably 30 years later bore Reu, the result would look like this:



We can see from the diagram that these three men must have been contemporaries, with Eber the oldest. If Eber had actually been born earlier than Peleg and Reu, and if he had outlived both Peleg and Reu (as the diagram shows), so that he was the patriarch, so to speak, of the clan, one would surely think it would have been a matter of divine record that he, instead of Peleg, lived when the earth was divided. Thus, we are led again to the conclusion that the term “begat” as used in Genesis 5 and 11, must have, at least in some instances, reference to some relationship other than that of an immediate father-son.

As we reflect further on the question at hand, two passages must be examined. These passages suggest an answer to our problem that can be shown to make abundant sense. The first is Genesis 7 and 8 where the dates of the flood events are referenced to the age of Noah. Genesis 8:13 records:

And it came to pass in the six hundredth and first year, in the first month, the first day of the month, the waters were dried up from off the earth: and Noah removed the covering of the ark, and looked, and, behold, the face of the ground was dry.

Genesis 7:6 indicates that the six hundred years was the age of Noah when the flood came. This leads us to an important question: Could the calendars of ancient peoples have been tied to the life spans of certain individuals?

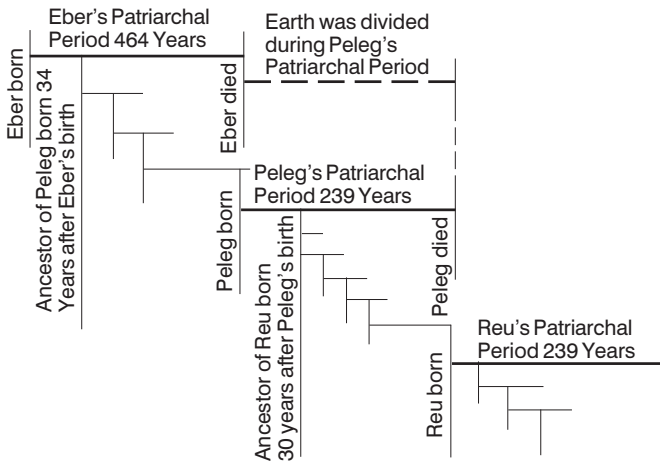
The second passage is in the New Testament where Christ declares in Matthew 24:34:

Verily I say unto you, This generation shall not pass, till all these things be fulfilled.

In this reference, Christ is speaking of events that will take place just before His return. He, therefore, insists that “this generation” will continue for at least two thousand years, for this much time has elapsed and all of the events of which he was prophesying in Matthew 24 have not yet happened. As a matter of fact, this present generation is the generation of Jesus Christ.¹ We speak of years today as “A.D.” which means the year of Our Lord. The events of today are dated exactly as they were in Noah’s day: by reference to the birth date of a person.

Since this method of dating events, which was practiced in Noah’s day, was suggested by Jesus Himself, and is actually the practice used today, could not this have been the method described in Genesis 5 and 11? If so, then Eber, Peleg, and Reu were patriarchs who followed each other in history. Each in turn was the reference point for his period or generation in history. This makes abundant sense and would provide for continuity and clarity in historical reckoning.

Thus, we see that when the Bible records that Eber was 34 year old when Peleg was born and lived 430 years after the birth of Peleg, fathering other sons and daughters (Genesis 11:16), it means literally that when Eber was 34 years of age, a son was born to him. This might have been his first (immediate) son or it might have been a second, third, or even a fourth removed in his line of direct descendants. Significantly, the Bible does not record that Eber “called his name Peleg” because as a point of fact Peleg was not born until about the time Eber died. The son born to Eber at age 34 was an ancestor of Peleg, but his name is nonessential insofar as God’s record is concerned. The important fact to remember is that the patriarchal successor to Eber was Peleg. Peleg was a direct descendant, and Eber at 34 was the progenitor of the Peleg line. The result should look like this:



We are suggesting that the language of Genesis 5 and 11 which follows the equation:

“A” lived “x” years and begat “B” and “A” lived after he begat “B” for “y” years,

is actually a calendar. Exceptions to the patriarchal calendar are introduced, namely, Adam begetting Seth, Seth begetting Enosh, and Lamech begetting Noah. Yet these exceptions are distinguished by the phrase “called his name,” thus showing Seth, Enosh, and Noah to be immediate sons. Of course some of our conclusions are still tentative; but as we consider more and more data, we will discover how close to the truth we are.

NOTES:

¹ The Greek work translated in this verse is *genea*. It is translated “generation,” “age,” and “nation” in the King James Bible. It could have reference in this verse to the nation of the Jews who would endure until Christ’s return. More likely, it refers to the generation of evil that has existed all through history and will exist until the end of time.

Chapter 4

Patriarchal Periods on the Family Tree

We have seen that when the phrase “called his name,” the Hebrew *qara shem*, is used in the Bible, it has reference to an immediate son. Thus, we know that Seth was the immediate son of Adam, Enosh was the immediate son of Seth, and Noah was the immediate son of Lamech. We have also determined that in two cases where this key phrase is not used in connection with close relatives, there is sufficient evidence in other parts of the Bible to assure us that they are related to each other on an immediate father-son basis. Thus, we know with certainty that Shem was an immediate son of Noah and that Abraham was an immediate son of Terah.

Finally, we discovered that the other individuals named in the genealogical records of Genesis 5 and 11 are probably not related as immediate descendants. In fact, we have seen that the Bible offers some evidence that they were not closely related at all. Rather, we offered the suggestion that the year of birth of one individual coincided with the death year of the person named before him in the ancestral table. We proposed that each of these remaining characters are patriarchal leaders, each heading his own ancestral division.

The Key That Unlocks Genesis 5 and 11

Though it may seem a bit removed from our discussion, it develops that an understanding of the Israelite’s genealogy during the time of their sojourn in Egypt provides the key that confirms our understanding of Genesis 5 and 11. When we study the genealogical descent of Levi, who entered Egypt as a son of Jacob, we find additional evidence that substantiates our patriarchal calendar. We will show that during the Egyptian sojourn a kind of calendar existed which was referenced to descendants of Levi, with each of his descendants being the reference patriarch during his entire lifetime.

To develop this point, let us now examine the various Biblical references which relate to the descendants of Levi, who entered Egypt

with his brothers and his father Jacob, after Joseph had become prime minister. These references are as follows.

Genesis 46:11: And the sons of Levi; Gershon, Kohath, and Merari.

Exodus 2:1-10: And there went a man of the house of Levi, and took to wife a daughter of Levi. And the woman conceived, and bare a son: and when she saw him that he was a goodly child, she hid him three months. And when she could not longer hide him, she took for him an ark of bulrushes, and daubed it with slime and with pitch, and put the child therein; and she laid it in the flags by the river's brink. And his sister stood afar off, to wit what would be done to him. And the daughter of Pharaoh came down to wash herself at the river; and her maidens walked along by the river's side; and when she saw the ark among the flags, she sent her maid to fetch it. And when she had opened it, she saw the child: and, behold, the babe wept. And she had compassion on him, and said, This is one of the Hebrews' children. Then said his sister to Pharaoh's daughter, Shall I go and call to thee a nurse of the Hebrew women, that she may nurse the child for thee? And Pharaoh's daughter said to her, Go. And the maid went and called the child's mother. And Pharaoh's daughter said unto her, Take this child away, and nurse it for me, and I will give thee thy wages. And the woman took the child, and nursed it. And the child grew, and she brought him unto Pharaoh's daughter, and he became her son. And she called his name Moses: and she said, Because I drew him out of the water.

Exodus 6:16-20: And these are the names of the sons of Levi according to their generations; Gershon, and Kohath, and Merari: and the years of the life of Levi were an hundred thirty and seven years. The sons of Gershon; Libni, and Shimi, according to their families. And the sons of Kohath; Amram, and Izhar, and Hebron, and Uzziel: and the years of the life of Kohath were an hundred thirty and three years. And the sons of Merari; Mahali and Mushi: these are the families of Levi according to their generations. And Amram took him Jochebed his father's sister to wife; and she bare him Aaron and Moses: and the years of the life of Amram were an hundred and thirty and seven years.

Exodus 7:7: And Moses was fourscore years old, and Aaron fourscore and three years old, when they spake unto Pharaoh.

Numbers 3:15-20: Number the children of Levi after the house of their fathers, by their families: every male from a month old and upward shalt thou number them. And Moses numbered them according to the word of the LORD, as he was commanded. And these were the sons of Levi by their names; Gershon, and Kohath, and Merari. And these are the names of the sons of Gershon by their families; Libni, and Shimei. And the sons of Kohath by their families; Amram, and Izehar, Hebron, and Uzziel. And the sons of Merari by their families; Mahli, and Mushi. These are the families of the Levites according to the house of their fathers.

Numbers 3:27-28: And of Kohath was the family of the Amramites, and the family of the Izeharites, and the family of the Hebronites, and the family of the Uzzielites: these are the families of the Kohathites. In the number of all the males, from a month old and upward, were eight thousand and six hundred, keeping the charge of the sanctuary.

Numbers 26:57-59: And these are they that were numbered of the Levites after their families: of Gershon, the family of the Gershonites: of Kohath, the family of the Kohathites: of Merari, the family of the Merarites. These are the families of the Levites: the family of the Libnites, the family of the Hebronites, the family of the Mahlites, the family of the Mushites, the family of the Korathites. And Kohath begat Amram. And the name of Amram's wife was Jochebed, the daughter of Levi, whom her mother bare to Levi in Egypt: and she bare unto Amram Aaron and Moses, and Miriam their sister.

I Chronicles 6:1-3: The sons of Levi; Gershon, Kohath, and Merari. And the sons of Kohath; Amram, Izhar, and Hebron, and Uzziel. And the children of Amram; Aaron, and Moses, and Miriam. The sons also of Aaron; Nadab, and Abihu, Eleazar, and Ithamar.

I Chronicles 6:16-18: The sons of Levi; Gershom, Kohath, and Merari. And these be the names of the sons of Gershom; Libni, and Shimei. And the sons of Kohath were, Amram, and Izhar, and Hebron, and Uzziel.

The Time Bridge

Some interesting observations which impinge on our study can be noted about these references to the descendants of Levi.

1. The phrase “called his name” (*qara shem*) is not used in these references except in Exodus 2:10 where the child of this passage is named Moses by the Egyptian princess.

2. It is very clear from the detail given in Exodus 2:1-10 as well as the use of the phrase *qara shem* that Moses was the son of the unnamed man and woman of Exodus 2:1.

3. With all of the other detail given in Exodus 2:1-10, it is significant that Amram and Jochebed are not named as the father and mother of Moses as Exodus 6:20 would appear to indicate. Why are the names Amram and Jochebed omitted from the detailed account of Exodus 2:1-10 if they were Moses’ father and mother?

4. There is no evidence of an immediate father-son relationship in any of these accounts except in the Exodus 2:1-10 account which relates Moses to an unnamed father and mother.

5. The life spans of Levi and only two of his descendants are noted as are the ages of Moses and Aaron at the time of the Exodus (Exodus 6:16-20, Exodus 7:7). Does this appear rather strange? What purpose could God have in mind in giving us the ages of just these men? Is there a possibility that in these verses a time bridge was built across the period from Jacob’s descent into Egypt to the Exodus?

6. If Kohath is the father of Amram and Amram is the father of Moses, how can we account for the reference of Numbers 3:27-28 which indicates the number of male descendants of Kohath to be 8600 persons? Since the census of Numbers 3 was taken at Mount Sinai (Numbers 3:1), when Moses, the apparent grandson of Kohath, was about 82 years old, there could not possibly have been this many descendants in such a short period of time.

Parents and Patriarchs

We shall begin to answer these difficult questions by attempting to arrive at the age of Levi when he entered Egypt. This information is essential if we are to correlate the various time notices given in the Bible that refer to the Israelites’ sojourn in Egypt. In particular, if we can relate Levi’s age to the age of his father Jacob who was 130 years old when he entered Egypt (Genesis 47:9), we will have the correlation we are seeking.

We do know that Levi's younger brother Joseph was probably 39 when Jacob was 130 because Joseph was 30 when he was made ruler over Egypt (Genesis 41:46); and it was during the second year of the famine, or nine years later, that he revealed himself to his brothers (Genesis 45:6). Thus, we know that Jacob was 91 years of age when Joseph was born ($130 - 39 = 91$).

Can we now discover how much younger Joseph was than Levi? The solution to this question depends upon whether Jacob spent 20 years or 40 years in Haran with his Uncle Laban. If he spent 20 years, the time sequence would work out something like this: Jacob worked seven years for Rachel (Genesis 29:20). Deceived into marriage with Laban's older daughter, Leah, Jacob was forced to serve another seven years for Rachel, whom he apparently married at the beginning of this second seven years (Genesis 29:30). Since Jacob worked six years for the flocks he received from Laban (Genesis 31:41), and these six years followed the birth of Joseph (Genesis 30:24 ff), all of Jacob's children, with the exception of Benjamin, must have been born during the period that he worked the second seven years which was for Rachel. With Levi being the third son and Joseph the last born during this period, Levi must have been at least four years older than Joseph.

For a number of reasons this conclusion appears untenable. For instance, we know Jacob was 91 when Joseph was born, and if we assume Jacob spent only 20 years in Haran, he must have been about 84 or 85 when Reuben, his first son, was born, and he must have been 77 when he came to Haran. Although this could be possible, it seems a bit difficult to believe. Abraham, for example, at the age of 86 was so concerned about being childless at his advanced age that he fathered Ishmael by his Egyptian maid, Hagar, to be sure that somehow God's promise would be carried out (Genesis 17:17). When Abram was 100 the Bible says he was old and advanced in years (Genesis 18:11). Because of the deep concern of the patriarchs concerning God's promises, which were to be fulfilled in their descendants, it does not seem at all reasonable that Jacob would have waited until he was an old man of 84 before he married. It is also noteworthy that none of the records leading back to Shem mention a man being 84 at the birth of his firstborn. Abraham is the obvious exception.

Furthermore, to conclude that so many children were born to Jacob during the second seven-year period while he was working to pay for Rachel is also difficult. Presumably during this period Leah

bore four children, none of whom were twins (Genesis 29:31-35); she then ceased bearing (Genesis 29:35), and because she ceased bearing she gave Zilpah, her maid, to Jacob to father two sons (Genesis 30:9-13) and finally she bore two more sons and a daughter (Genesis 30:16-21). To conclude that all of these events occurred during a seven year period seems quite impossible.

Also, if Jacob's time with Laban in Haran had been restricted to 20 years, the events related in Genesis 38 concerning Judah's family would have been well nigh impossible. Chapter 38 records events that lead up to the birth of twin sons to Judah by his daughter-in-law, Tamar. Genesis 46:11 indicates these sons of Judah, Perez and Zerah, went into Egypt with Jacob. On the presumption of a 20-year Haran sojourn, Jacob could not have been less than 88 or 89 when Judah was born. Since Jacob was 130 when he entered Egypt, Judah could not have been older than 31 or 32 years when he entered Egypt. During this 31 or 32 years Judah would have had to grow from a baby to manhood, and additionally, all of the events of Genesis 38 would need to have taken place. These events are as follows:

Judah married a Caananite woman called the daughter of Shua. She gave him three sons, Er, Onan, and Shelah. Er grew up and married Tamar. Er died without seed (it could have been soon after marriage). Onan was slain by God because he refused to marry Tamar upon Er's death.

Judah promised his youngest son, Shelah, to Tamar as a husband, but she had to wait until he grew up.

Shelah grew up but was not given to Tamar.

Tamar, rebuffed at Judah's broken promise concerning Shelah, enticed Judah to commit adultery with her. Twin sons, Perez and Zerah, were born from this union. These sons, together with Shelah, entered Egypt with Judah.

Quite obviously all of these events could not have taken place within a period of 32 years, that is, unless Judah and Er were as young as 12 to 14 when they were married, which is completely improbable and has no Scriptural validation. Only if we understand that Jacob sojourned in Haran longer than 20 years does this record make historical sense.

Jacob: Forty Years in Haran

What alternative to a 20-year sojourn in Haran does the Bible offer? Genesis 29:18-30, clearly indicates that Jacob worked the first fourteen years as payment for Rachel and Leah. Genesis 30:25-32 indicates that following Joseph's birth, Jacob made a contract with Laban to work in return for keeping as his own spotted and speckled sheep. Genesis 31:41 summarizes his work for Rachel and Leah and indicates that he worked for a period of six years for his flocks. Genesis 31:41:

Thus have I been twenty years in thy house; I served thee fourteen years for thy two daughters, and six years for thy cattle: and thou hast changed my wages ten times.

Since Jacob left Haran immediately after he had obtained his flocks, the only time during his Haran sojourn which could have added to the twenty years named in Genesis 31:41 would be the time between his contract to obtain Rachel and Leah and his contract to obtain his flocks. In other words, he must have worked for wages of some kind for a period of time following the expiration of his second seven year agreement to obtain Rachel. During this wage-earning period his family continued to grow until Joseph was born. Then he wished to leave but was induced to stay in Haran in return for obtaining as his own all the oddly marked sheep.

How long was this wage-earning period? The only clue the Bible offers is the notice of Genesis 31:38-39:

This twenty years have I been with thee; thy ewes and thy she goats have not cast their young, and the rams of thy flock have I not eaten. That which was torn of beasts I brought not unto thee; I bare the loss of it; of my hand didst thou require it, whether stolen by day, or stolen by night.

Since twenty years is also named here as a time span, some would conclude this is the identical period named in verse 41 of the same chapter. But this cannot be for, as we have seen, we must assume his total stay was more than 20 years. Moreover, that these were different 20-year periods is suggested by the language of verse 39 where the Bible indicates that Jacob had to pay for animals stolen or killed by beasts, and of verse 38 which implies he had to pay for any animals killed for his own food. These conditions may have been a part of his contract with Laban when he acquired Rachel and Leah, but the Bible gives no indication of this. These are not the kind of conditions that

one would expect as a part of a contract for a man's daughter. They would be too petty and would tend to demean the value of the daughters. On the other hand, they would be very logical clauses in a contract in which money is paid for services rendered. [The phrase "thou hast changed my wages ten times" in verse 41 clearly has reference to the last six years when Jacob received his flocks (see Genesis 31:7-8), and therefore, does not relate to any other time except this six-year period. These six years followed the twenty years recorded in Genesis 31:38-39].

Therefore, we must conclude that the twenty years of Genesis 31:38 were in addition to the twenty years of Genesis 31:41, making a total of forty years in all. They followed the second seven year contract for Rachel and ended with the beginning of the new six-year contract for the speckled sheep.

Returning to Levi, we remember that he could not have been less than four years Joseph's senior, but with this added 20 year period he may have been as many as 24 years his senior.

The Bible does appear to indicate that Joseph was probably closer to 24 years younger than Levi than to four years younger. According to Genesis 29:31-35, Leah bore four children without ceasing to bear. Thus Levi, the third child, could well have been born in the third year after Jacob's marriage or the tenth year after Jacob arrived in Haran. If his birth was not in the third year, it probably was very close to it. Joseph, on the other hand, was born in the year just prior to the last six years (Genesis 30:25) or at most, a few years earlier than the last six years.

The book of Maccabees is not inspired by God and is not a part of the Bible. But it does give some historical information. In the Book of Maccabees (7:27) it suggests a child was weaned at the age of three years. In II Chronicles 31:16, we read that the age of three was the minimum age for males to enter the house of the Lord for service. In I Samuel 1:22-24 we read that Hannah brought young Samuel to the house of the Lord immediately following his weaning. Thus, by relating these two passages, we receive the impression that weaning took place at the age of three, indicating the reliability of the Maccabees account on this point. Therefore, it is possible and indeed quite probable that Joseph was weaned at three years. Jacob was then ready to leave Haran. It was at this time that he began his last six years with Laban.

In summary, we must conclude that the period between the births of Levi and Joseph could not have been more than 24 years. Moreover, it seems likely that this period could not have been less than a few years short of 24 years. A 21-year age differential between Levi and Joseph is most probable. This is the result of assuming that Levi was born in the tenth year after Jacob arrived in Haran, and that Joseph was born nine years before Jacob left Haran, at the age of 91. Since he lived in Haran for 40 years, he would have arrived there when he was 60 years old, 31 years before Joseph's birth. This conclusion establishes the following sequence of events:

Jacob arrives in Haran at the age of	60
He works seven years for Rachel and is then married to Rachel and Leah. He is then	67
Reuben is born to Leah the following year when Jacob is	68
Simeon is born next to Leah when Jacob is	69
Levi is born next to Leah when Jacob is	70
Jacob finishes his second seven-year contract for Rachel when he is	74
He works for wages for 20 years. In the 17th year of this period Joseph is born. Jacob is	91
At the end of this 20 year period Joseph is weaned and Jacob wishes to leave Haran. He is	94
He works six years longer for his flocks and leaves Haran at age	100

Interestingly, there is a bit of circumstantial evidence that gives further credence to the possibility of Jacob being 60 years of age when he arrived in Haran. The situation that precipitated Jacob's leaving for Haran was the threat that his brother Esau would kill him for stealing the blessing (Genesis 27:41). The blessing was given at this time because undoubtedly father Isaac feared he would soon die.

Isaac's own words indicate this in Genesis 27:2:

And he said, Behold now, I am old, I know not the day of my death.

If Jacob was 60 years old at this time, Isaac was 120 because Jacob and Esau were born when Isaac was 60 years old (Genesis 25:26). Isaac lived to the ripe old age of 180 years (Genesis 35:28). Therefore, he was a long way from being near death when he wanted to give the blessing. What could have induced him to do this so many years before he actually died? Let us recall that God made a significant statement to Noah before the flood. He said in Genesis 6:3:

And the LORD said, My spirit shall not always strive with man, for that he also is flesh: yet his days shall be an hundred and twenty years.

Could it not have been that faithful Isaac, fully aware of this notice to Noah, decided in his 120th year that it was time to straighten out his affairs? Therefore, he immediately set into motion the events that ended with Jacob's flight to Haran. This is at least a possibility and it fits into the chronological timetable.

Returning to our timetable, we see that all of the Biblical conditions are met if we consider that Levi was 21 years older than Joseph. While the Bible does not give exact information that points to a 21-year age differential between Levi and Joseph, we know that it cannot be more than two or three years in error. The circumstantial evidence based on the weaning of a child at three years and the reasons for Jacob's flight to Haran as outlined above, point to 21 years as a logical and Biblical answer.

The Perfect Tally

One other piece of evidence points precisely to the 21-year age differential and also shows how time was reckoned during the Egyptian sojourn. In fact, it also gives us the Biblical evidence for understanding the language of Genesis 5 end 11.

We previously saw that Joseph was 39 when Jacob and his family entered Egypt. Since Levi, as we have seen, must have been 21 years older than Joseph, he would have been 60 when Jacob's family entered Egypt. Since Levi died at the age of 137 (Exodus 6:16), 77 years (137 - 60) of his life would have been spent in Egypt.

Let us recall the premise which we established. In the absence of evidence that the Genesis genealogies specifically indicate an

immediate father-son relationship, we may assume the relationship to be one which interrelates individual patriarchs living their entire lifetime as the family head. Let us apply this principle to the family of Levi. In Exodus 6:16-20, we saw the genealogical sequence of Levi. His 137 years were followed by Kohath's 133 years which in turn were followed by Amram's 137 years; Amram was followed by Aaron. Since we know that Levi lived 77 years in Egypt (if our 21 year assumption is correct), and since the Bible indicates that Aaron was 83 years old at the time of the Exodus (Exodus 7:7), all of the ingredients are available to establish the chronological sequence during the Egyptian sojourn. Remember that the death year of one patriarch coincides with the birth year of the next, thus, the result must look like this:

Levi's time in Egypt (137 - 60)	77 years
Kohath's period of patriarchal leadership	133 years
Amram's period of patriarchal leadership	137 years
Aaron's age at the time of the Exodus (Exodus 7: 7)	83 years
Total	<hr/> 430 years

This sum tallies exactly with Israel's sojourn in the land of Egypt, which we read was 430 years in Exodus 12:40-41:

Now the sojourning of the children of Israel, who dwelt in Egypt, was four hundred and thirty years. And it came to pass at the end of the four hundred and thirty years, even the selfsame day it came to pass, that all the hosts of the LORD went out from the land of Egypt.

Thus, we see that our assumption is correct that in certain situations there existed a patriarchal calendar with one patriarch living his entire lifetime as the family head. God indicates to us that the generation or patriarchal period of Kohath followed the period of Levi and commenced in the year that ended Levi's period. Similarly, Amram's generation followed Kohath's. Aaron's generation began at the death of Amram. In this way the Bible gives us a time bridge covering the Israelites sojourn in Egypt that is identical with the 430 years of Exodus 12:40.

It could be argued that this genealogical proof is based upon the assumption that Levi was 21 years older than Joseph and, therefore, is not necessarily valid. Yet if we look at the alternatives, we can see the validity of this assumption. We saw that in any case Levi could not have been more than 24 years older than Joseph and probably not less than a few years short of 24 years older than Joseph. Thus, the period of Levi's residence in Egypt could have been as much as three years more or less than the 77 years arrived at in this study. There would, therefore, have been a cumulative gap or overlapping in the genealogical timetable of Levi to Aaron of not more than possibly two or three years. Even though this is possible, it makes no apparent sense in any kind of patriarchal dynastic system or calendar system. If any kind of gap or overlapping occurred, one would expect a far greater number of years than these few, inasmuch as then the time spans would probably begin when each patriarch was old enough to assume leadership. In addition, the Biblical record of the births of Reuben, Simeon, and Levi in rapid succession to Leah, and which is followed by the statement that then she ceased to bear, agrees very well with the timetable of Levi being born during Jacob's tenth year in Haran. Furthermore, the Maccabee's account of a Jewish child being weaned at three years focuses the birth of Joseph nine years before Jacob left Haran. Since he lived in Haran a total of 40 years, 21 years would have elapsed between the births of Levi and Joseph. This figure agrees with the genealogical proof under discussion.

While Exodus 6:16-19 refers to the generations of Levi by name, significantly Kohath and Amram are the only two patriarchs of all of those named whose ages have been written into the genealogical record. Obviously, the family of Levi, from Kohath to Amram and finally to Aaron, was the patriarchal family selected during the 430-year bondage in Egypt to establish the calendar during this period. The method of doing this would have been similar to that done by their forefathers before Abraham.

This, I believe, is the reason why the ages of Levi, Kohath, and Amram have been recorded, and one of the reasons why we are given so many details that relate to the ages of Joseph and Moses. It is why the parents of Moses are not named Amram and Jochebed in Exodus 2:1, when so many other details concerning the birth of Moses are given. Amram and Jochebed were not the immediate parents of Moses. Moses was of the patriarchal family of Amram. Amram must have died the year of Aaron's birth.

We can now see how the descendants of Kohath (Amramites, the family of Izharites, the family of Hebronites, and the family of Uzzielites), numbered 8600 men at the time of Mount Sinai (Numbers 3:27-28). Kohath had died 220 years before the Exodus, and 220 years are sufficient for his male descendants to number as many as 8600.

It also throws a spotlight of revelation upon God's prophecy to Abram in Genesis 15:13-16, where he tells Abram that his descendants would be oppressed 400 years in a land that was not theirs, and that they would return to their own land in the fourth generation. Levi was the first, Kohath the second, Amram the third, and Aaron the fourth in the prophetic sequence.

Thus, God in His wonderful wisdom has placed in our hands a key that unlocks the hitherto perplexing genealogies of Genesis 5 and 11. The key is the chronological record of the Israelite's sojourn in Egypt. By properly understanding the timetable of the Egyptian sojourn, we establish the evidence for understanding Genesis 5 and 11. God gave considerable information about the Egyptian sojourn so that this key could be found.

Genesis 5 and 11 Are A Calendar

To return to the disputed genealogies of Genesis 5 and 11, we have already pointed out that in the cases of Adam and Seth, Enosh and Lamech, Noah and Shem, and finally Terah and Abraham, the Bible indicates conclusively the existence of immediate father-son relationships. But all of the other names recorded, we must assume, were the patriarchal heads of families and followed each other chronologically even as they did in the case of Levi, Kohath, Amram, and Aaron.

When we reflect a bit further on the conclusions of our foregoing study, we discover that Genesis 5 and 11 are actually a kind of calendar. Think for a moment of our present calendar. We speak of an event that happened in the year 1950, for instance. What we mean is that this event occurred in the year of our Lord 1950 or that 1950 is the 1950th year after the birth of Christ. This is the generation or patriarchal period, if you will, of Jesus Christ. In Matthew 24:34, Jesus, the Lord of all history, uses the language of man's earliest history when he describes the certainty of God's plan until the end of the age. We read in Matthew 24:34:

Verily I say unto you, This generation shall not pass, till all these things be fulfilled.

This was the same situation that existed in man's early history. The time was divided into patriarchal periods or generations even as the New Testament period is the generation of Jesus Christ and as the Egyptian sojourn was so divided. For example, when Methuselah died, which brought his generation to an end, a man who was born in the year of Methuselah's death was selected to be the next reigning patriarch or at least the next man for calendar reference. After Methuselah, this was Lamech. None of the conditions of his selection are given except that he had to be a descendant of Methuselah. Therefore, the Bible indicates that Methuselah was 187 years old when he begat Lamech; that is, when he was 187, the forefather of Lamech was born to Methuselah (Genesis 5:25). This notice establishes the certainty of Lamech's blood descent from Methuselah by showing where his forefather tied into the life of Methuselah.

The selection of the next patriarch had to include a birth date that coincided with Methuselah's death date to ensure a rational history. Had he been born one or more years earlier, an overlap would have occurred which would have blurred history. If Lamech had been born one or more years later than Methuselah's death, a gap would have occurred which would have confused history. Therefore, when a citizen of the world of that day spoke of an event occurring in the year Methuselah 950, only one year in history answered to this date. Again, if he spoke of the year Lamech 2, only one year answered to this date, and he knew precisely how many years transpired from Methuselah 950 to Lamech 2.

At the beginning, men were comparatively scarce. Thus, it seems apparent that when Adam died, no one was born that year who was qualified to become the next reference patriarch. When Seth died 112 years later, the same situation prevailed. God alerts us to these facts by use of the phrase *qara shem* in connection with Seth and Enosh. But when Enosh, the grandson of Adam, died 98 years after Seth, a child who was a descendant of Enosh was born in the same year and was eventually named the next reference patriarch. This was Kenan, whose life span became the calendar reference for that period of history. The calendar was continued in this fashion until Methuselah died and Lamech was born.

When Lamech was born, he was the one to whom the calendar was referenced. But his descendant who was born the year of Lamech's

death and who should have become the next patriarch, died in the flood. This can be known for Lamech died five years before the flood and only Noah and his immediate family survived the flood. Noah, who was an immediate son of Lamech, of necessity became a substitute calendar reference. Thus, the flood events are all dated by the life span of Noah (Genesis 7:6,11, Genesis 8:4-5, 13-14).

When Noah died 350 years after the flood, the same situation prevailed that existed when Adam died. Few people lived upon the earth and no one met the conditions required to become the next reference patriarch. When Shem died 152 years after Noah, the child, Arpachshad, a descendant of Shem, was born in the same year, and he became the next patriarch. The calendar was then continued in this fashion until Terah was born.

When Terah was born, he became the reference patriarch. During his life span, God brought into being the nation of Israel through Terah's immediate son, Abram. Thus, the descendant of Terah, who was born the year of Terah's death, was outside the Messianic line and outside of God's chronological purposes. God effectively had narrowed men down to the family of Abram; the normal method of calendar keeping was set aside in the absence of qualified patriarchs.

No descendant of Abraham was born the year he died. When Isaac, the immediate son of Abraham died, the same situation prevailed. This was repeated when Jacob, the immediate son of Isaac, died. But in the year that Levi, the immediate son of Jacob died, a descendant of Levi was born whose name was Kohath, and he apparently met the qualifications of a reference patriarch. Thus, he continued the calendar line as we have seen. Amram followed Kohath, and Aaron, Amram. Interestingly, it can be shown that in a real sense Aaron's generation continued until Christ's began almost 2000 years ago. We shall examine this in Appendix V. Thus, God has given in His Word a complete calendar from creation to Christ.

The Timetable of Man Revealed

We are now ready to establish the chronology beginning with Adam. To establish this genealogical table, we must begin with a date that has been positively identified through non-Biblical sources, such as archaeological and astronomical evidence. Only in this way can we relate the Biblical record to our modern calendar. Because so much

work has been done in recent times, particularly in relation to the dating of the kings of Israel, this can be done rather readily. We are particularly indebted to the eminent scholar Edwin R. Thiele, who in his book, *The Mysterious Numbers of the Hebrew Kings*,¹ established the date of the death of Solomon and the division of the kingdom as 931 B.C.² Since Solomon reigned 40 years (I Kings 11:42), and began building the temple in the fourth year of his reign (I Kings 6:1), the building began in the year 967 B.C.

Very significantly, God gives us the time bridge from the Exodus to the building of the temple. This is recorded in I Kings 6:1:

And it came to pass in the four hundred and eightieth year after the children of Israel were come out of the land of Egypt, in the fourth year of Solomon's reign over Israel, in the month Zif, which is the second month, that he began to build the house of the LORD.

In a later chapter we shall discover another Biblical time bridge that substantiates this time span. A time span of 480 years brings us to 1447 B.C. as the date of the Exodus. If we work from this date back to Adam, we arrive at a date for Adam of 11,013 B.C. The following table shows this chronology beginning with Adam, the first man in historical time.

Revised Table of Chronological Events

	<u>B.C.</u>
Creation of Adam	11,013 ³
Birth of Seth. Adam was 130 when Seth was born (Genesis 5:6)	10,883
Birth of Enosh. Seth was 105 when Enosh was born (Genesis 5:6)	10,778
End of Enosh's period 905 years after his birth (Genesis 5:11), which is the year Kenan was born and which began his period	9873
End of Kenan's period 910 years after his birth (Genesis 5:14). This is the year Mahalel was born and the beginning of his period	8963

End of Mahalel's period 895 years after his birth (Genesis 5:17). This is the year Jared was born and the beginning of his period	8068
End of Jared's period 962 years after his birth (Genesis 5:20). This is the year Enosh was born and the beginning of his period	7106
End of Enoch's period 365 years after his birth (Genesis 5:23). This is the year Methuselah was born and the beginning of his period	6741
End of Methuselah's period 969 years after his birth (Genesis 5:27). This is the year Lamech was born and the beginning of his period	5772
Birth of Noah. Lamech was 182 when Noah was born (Genesis 5:28-29)	5590
The flood. Noah was 600 when the flood came (Genesis 7:6)	4990
Death of Shem 502 years after the flood (Genesis 11:10-11). This is the year Arpachshad was born and the beginning of his period	4488
End of Arpachshad's period 438 years after his birth (Genesis 11:12-13). This is the year Shelah was born and the beginning of his period	4050
End of Shelah's period 433 years after his birth (Genesis 11:14-15). This is the year Eber was born and the beginning of his period	3617
End of Eber's period 464 years after his birth (Genesis 11:16-17). This is the year Peleg was born and the beginning of his period	3153
The Tower of Babel must have been built between these dates (Genesis 10:25)	
End of Peleg's period 239 years after his birth (Genesis 11:18-19). This is the year Reu was born and the beginning of his period	2914

End of Reu's period 239 years after his birth (Genesis 11:20-21). This is the year Serug was born and the beginning of his period	2675
End of Serug's period 230 years after his birth (Genesis 11:22-23). This is the year Nahor was born and the beginning of his period	2445
End of Nahor's period 148 years after his birth (Genesis 11:24-25). This is the year Terah was born and the beginning of his period	2297
Birth of Abram to Terah. Terah was 130 years old at birth of Abram	2167
Circumcision of Abraham when he was 99 years of age	2068
Birth of Isaac. Abraham was 100 years old at birth of Isaac (Genesis 21:5)	2067
Birth of Jacob. Isaac was 60 years old at birth of Jacob (Genesis 25:26)	2007
Jacob's family arrived in Egypt when Jacob was 130 (Genesis 47:9)	1877
Exodus from Egypt 430 years later (Exodus 12:40)	1447
Entrance into Canaan 40 years later	1407
Solomon's temple construction was begun 480 years after Exodus (I Kings 6:1)	967
Division of kingdom at death of Solomon 36 years later	931

Summary

Thus far, we have seen that God has provided in His marvelous Word a calendar that reaches back all the way to the first man, Adam. From the data offered in Exodus 6 concerning the life spans of Levi, Kohath, and Amram, we have discovered that these ancient peoples

kept track of time by referencing the passage of time to the life spans of certain key individuals. These individuals were selected on the basis of at least two qualifications:

1. Their birth year had to coincide with the death year of the previous reference patriarch.
2. They were to be in the same blood line of the previous reference patriarch.

By analyzing all of the Biblical data concerning Levi, Kohath, Amram, and Aaron, we discovered that they met these two qualifications.

We then applied our understanding of the ancient method of calendar keeping to the genealogical accounts found in Genesis 5 and Genesis 11. There the life span of each reference patriarch is given. Additionally, the age of each reference patriarch is given, at which point the next reference patriarch tied into his blood line. The formula that is used in each case is:

When A was 'x' years old he begat 'B'

'A' lived after he begat 'B' 'y' years and had other sons and daughters.

The sum of $(x + y)$ indicates the life span of the reference patriarch 'A.' He was 'x' years old when the progenitor of the next reference patriarch 'B' was born to him. The giving of the value of 'x' assured that 'B' was indeed of the blood line of 'A.'

There were periods in history when the above rules for calendar keeping could not be strictly kept. Such was the situation at the beginning, when men first began to multiply on the earth. This was the situation at the flood of Noah's day and the special time when God limited his people to the family of Abraham.

God uses two methods to guide our thinking through these special periods in history. In the first place, he indicates that wherever the clue phrase *qara shem* is used, which indicates a parent named his child, we can be sure the child in question is the immediate son of the parent. Such was the case of Adam-Seth, Seth-Enosh, and Lamech-Noah. In the second place, God at times gives other Biblical information to indicate an immediate father-son relationship. Such was the case with Noah-Shem, Terah-Abram, Abram-Isaac, Isaac-Jacob, Jacob-Levi, and the history of man following Aaron. By

applying these principles, we have been able to develop an accurate calendar of ancient man beginning with Adam at 11,013 B.C.

Our God is indeed a wise and all-sufficient God. Often when He gives us truth, He gives us abundant evidence to support that truth. When Christ rose from the dead, He showed Himself by many proofs (Acts 1:3), so there was no possibility of misunderstanding this wonderful event. When He gave us the facts of His earthly sojourn, God gave us four Gospels so that these truths would be especially clear. So, too, God has given us additional evidence in His Word which appears to substantiate and validate the correctness of the chronology outlined in this chapter. We will consider this evidence in the next chapter.

NOTES:

¹ Edwin R. Thiele, *The Mysterious Numbers of the Hebrew Kings*, Eerdmans Publishing Co., revised ed., 1965, p. 52.

See also Appendix I for a more detailed discussion of this date.

² We are not limited to Thiele's work. As we go on in our study and consider the history of Egypt and Israel, we will discover numerous identifications with this date. Thus, we know that this date is accurate.

³ Adam was created about 13,000 years before our present time.

Chapter 5

Chronology of the Judges

The chronological chain presented in this study has one link that looks very fragile. In I Kings 6:1, we read that there was a passage of 480 years from the Exodus from Egypt until the fourth year of Solomon's reign. Since this is a long period of time that covers the wilderness sojourn, the claiming of the land of Palestine by Joshua, the period of the judges, and the kingships of Saul and David, we cannot help but wonder if some additional Biblical evidence might be available to support this one lonely statement.

We saw in Chapter 4 that the 430-year Egyptian sojourn was supported by the genealogical timetable of Levi, Kohath, Amram, and Aaron. Can we find similar Biblical data to support the 480 years under question? Let us begin to examine this question by first establishing the chronology of Saul, David, and Solomon. Then we will examine in detail the period of the judges. We shall discover that there is definitely another time bridge, in addition to that given in I Kings 6:1, that links the Exodus to the time of Solomon. We shall also discover the precise chronology of the period of judges.

A David And Solomon Co-Regency

Let us begin this part of our reconstruction by discovering the precise time sequence of the first three kings of Israel: Saul, David, and Solomon. To establish this sequence, we must first of all discover if there was a co-regency between Saul and David, or between David and Solomon. While the Prophet Samuel anointed David king when he was but a lad, the Bible shows in unmistakable fashion that David's reign began after the death of Saul. The first two chapters of II Samuel should be consulted to verify this. Therefore, we can know that Saul's reign of 40 years (Acts 13:21), was followed by David's reign of 40 years (II Samuel 5:4). Thus, a period of 80 years transpired from the end of the period of the judges until the end of David's reign.

But when did Solomon begin to reign? Was it upon David's death or was it earlier? We shall discover that Solomon began to reign four years before David's death so that the fourth year of Solomon's reign coincided with the end of David's reign. Let us see how the Bible shows this.

The Bible shows a co-regency of David and Solomon of four years. The reason for the co-regency is easily found. First, Absalom aspired to be king when David was old (II Samuel 15:1-8). A few years later, another son of David named Adonijah declared he would be king (I Kings 1:5). Upon this turn of events, the Prophet Nathan instructed Bathsheba, the mother of Solomon, to remind King David of his promise that Solomon would be the heir to the throne (I Kings 1:11-14). David, thereupon, before he died and ceased to reign, declared Solomon king (I Kings 1:32-37), in order to remove any doubt concerning his successor.

David had one constant and consuming concern in the closing years of his life. The object of this concern is the event that ties the reigns of David and Solomon together and gives the evidence upon which the length of the co-regency can be determined. This concern was that the temple should be constructed. David was not permitted to build the house of God; we read in I Chronicles 28:3:

But God said unto me, Thou shalt not build an house for my name, because thou hast been a man of war, and hast shed blood.

But David made all kinds of provision for this building. He made the decision where it was to be located (I Chronicles 22:1). He put stone-cutters to work to prepare stones for the temple (I Chronicles 22:2); he provided great stores of nails, bronze, and cedar for the temple (I Chronicles 22:3-4); he provided for the operation of the temple (I Chronicles 23:4-5); he had all the construction plans drawn (I Chronicles 28:11-19); he provided all the gold, silver, and precious stones required for the temple construction (I Chronicles 29:2); and he provided for the financing of the temple (I Chronicles 29:3-9). In other words, David performed every possible preparation so that the actual construction could begin.

Even though the Bible gives David a prominent part in this preparation, it was actually a joint venture of David and Solomon. In I Chronicles 22:2-4, we read:

And David commanded to gather together the strangers that were in the land of Israel; and he set masons to hew wrought stones

to build the house of God. And David prepared iron in abundance for the nails for the doors of the gates, and for the joinings; and brass in abundance without weight; Also cedar trees in abundance: for the Zidonians and they of Tyre brought much cedar wood to David.

But in I Kings 5, we read how Solomon contracted for timbers from Hiram King of Tyre and from the Sidonians. In I Kings 5:17, notice is given that Solomon was in charge of the quarrying of the foundation stones. I Kings 5:18 indicates that Solomon was in charge of the building. All of these references relate to building activity before the laying of the foundation in the fourth year of Solomon.

David then charged Solomon in I Chronicles 22:14-16:

Now, behold, in my trouble I have prepared for the house of the LORD an hundred thousand talents of gold, and a thousand thousand talents of silver; and of brass and iron without weight; for it is in abundance: timber also and stone have I prepared; and thou mayest add thereto. Moreover there are workmen with thee in abundance, hewers and workers of stone and timber, and all manner of cunning men for every manner of work. Of the gold, the silver, and the brass, and the iron, there is no number. Arise therefore, and be doing, and the LORD be with thee.

And we read in I Chronicles 28:10:

Take heed now; for the LORD hath chosen thee to build an house for the sanctuary: be strong, and do it.

Not only did David lay this charge upon Solomon to begin construction, but he also gave a similar charge to the leaders of the people. David commanded all the leaders of Israel to help Solomon his son. We read in I Chronicles 22:17-19:

David also commanded all the princes of Israel to help Solomon his son, saying, Is not the LORD your God with you? and hath he not given you rest on every side? for he hath given the inhabitants of the land into mine hand; and the land is subdued before the LORD, and before his people. Now set your heart and your soul to seek the LORD your God; arise therefore, and build ye the sanctuary of the LORD God, to bring the ark of the covenant of the LORD, and the holy vessels of God, into the house that is to be built to the name of the LORD.

The picture that emerges from the Bible is one of great activity centered around the construction of the temple. At first David, the father King, guides his young son, King Solomon, in the multitudinous preparations as well as being directly active in these preparations himself. All of this activity points to the moment when the actual construction will begin at the building site. But the laying of the foundation may not take place as long as David is living.

Then David dies, and Solomon reigns alone. The command to “arise” and “build” still rings in his ears and the ears of the people. The great moment which David, Solomon, and all Israel had eagerly anticipated arrives. Upon David’s death, no obstacle stands in the way; and the laying of the temple foundation begins. All the preparations of the past several years now become reality. After a suitable period of mourning, probably no longer than 30 days, Solomon begins to carry out David’s command to arise and build.

The Biblical account surely intimates that Solomon began to lay the foundation about 30 days after David’s death. Thus, the fourth year of Solomon’s reign, when the foundation of the temple was laid, must have coincided with the fortieth year of David’s reign. The last four years of David’s reign, during which he reigned as co-regent with Solomon, were years of preparation for temple construction. The death of David freed Solomon to lay the foundation.

Therefore, we may conclude that since Saul reigned forty years and David reigned forty years, Saul’s reign must have begun 80 years earlier than Solomon’s fourth year. Since the fourth year of Solomon’s reign was 967 B.C., 80 years earlier was the year 1047 B.C., at which time Saul became king. Thus, the year 1047 B.C. must be regarded as the year that ended the period of the judges.

We have previously determined that the Exodus occurred in 1447 B.C. We know that they entered Canaan 40 years later (Exodus 16:35, Joshua 5:6-12, Numbers 14:34, Numbers 32:13), which was the year 1407 B.C. And since, as we have just discovered, Saul began to reign in 1047 B.C., a time span of 360 years was the duration of the period of the judges.

Is a 360-year span borne out by any other Biblical information? Many scholars have felt that it is impossible to establish a precise chronology for this time because the Biblical information seems to be confused and sketchy. At first look, this does appear to be the case, but when we analyze the Bible notices more carefully, we will see that they show that the period of the judges was indeed 360 years.

The following time notices are set forth in the Bible beginning with the entrance into Canaan and ending with the last time notice before the reign of Saul.

Judges 3:8	Israel served Cushanrishathaim 8 years	8
Judges 3:11	Land had rest 40 years	40
Judges 3:14	Israel served Eglon, King of Moab 18 years	18
Judges 3:30	Land had rest for 80 years	80
Judges 4:3	Israel oppressed by Jabin, King of Canaan, 20 years	20
Judges 5:31	Land had rest for 40 years	40
Judges 6:1	Israel in hand of Midian 7 years	7
Judges 8:28	Land had rest 40 years	40
Judges 9:22	Abimelech ruled Israel 3 years	3
Judges 10:2	Tola judged Israel 23 years	23
Judges 10:3	Jair judged Israel 22 years	22
Judges 10:8	Philistines oppressed Israel 18 years	18
Judges 12:7	Jephthah judged Israel 6 years	6
Judges 12:9	Ibzan judged Israel 7 years	7
Judges 12:11	Elon judged Israel 10 years	10
Judges 12:14	Abdon judged Israel 8 years	8
Judges 13:1	Israel in hand of Philistines 40 years	40
Judges 15:20	Sampson judged Israel 20 years	20

I Samuel 4:18	Eli judged Israel 40 years	40
I Samuel 6:1	Ark was in Philistines' hands 7 months. This figure rounded off to years equals 1 year	1
I Samuel 7:2	From time ark was returned until next event a passage of 20 years took place. Since no other time notices are given until I Samuel 13:1 which speaks of the length of King Saul's reign, we must assume this 20 years ends with the beginning of Saul's reign as king	20
	Total years	<hr/> 471

Inasmuch as 471 years is 111 years longer than the 360 years which appears to be the correct figure for this period of time, we could assume with many others who have studied this problem that some of the judges ruled as contemporaries. Since it would appear that we do not know who these judges were and when they ruled, we cannot expect to determine an exact chronology for this period of history.

The fact is, however, that a very exact chronology can be determined. If we look again at the above references, we note that there are two kinds. One describes the passage of time with respect to the land of Israel or to the rule of an Israelite judge. The other describes oppression or subjugation by a heathen power or king. If we separate the last kind from the total list, we discover a very exact chronology.

<u>Israel Chronology</u>		<u>Note on Oppression By Heathen Power</u>	
Land had rest	40 years ¹	Israel served	8 years
		Israel served Eglon	18 years
Land had rest	80 years ¹	Israel oppressed by Jabin	20 years

Land had rest	40 years ¹		
		Israel in hand of Midian	7 years
Land had rest	40 years ¹		
Abimelech rules	3 years		
Tola judged	23 years		
Jair judged	22 years		
		Philistines oppressed Israel	18 years
Jephthah judged	6 years		
Ibzan judged	7 years		
Elon judged	10 years		
Abdon judged	8 years		
		Israel in hand of Philistines	40 years
Sampson judged	20 years		
Eli judged	40 years		
Ark captured	1 year		
Final period of Samuel	20 years		
	<hr/>		<hr/>
	360 years		111 years

And 360 years agrees precisely with the period we have already established as the time span from the entrance into Canaan in 1407 B.C. until Saul became king in 1047 B.C. As we shall see, the oppression at various times adding up to 111 years really occurred during these 360 years.

We have established that as in the case of the two time bridges from Jacob to Moses, the Bible also offers two time bridges from the Exodus to Solomon. The first is the 480 years of I Kings 6:1. The second is found in the Books of Joshua, Judges, I and II Samuel, I Chronicles, I Kings, and Acts.

Let us now set forth this chronology in greater detail and establish some absolute dates. The Exodus occurred on Nisan 15, 1447 B.C., as we saw in Chapter 4. Joshua 5:6-12 indicates that the entrance into Canaan was exactly 40 years later which was the year 1407 B.C. The next chronological notice is that given in Judges 3:11 which declares, "And the land had rest forty years. And Othniel the son of Kenaz died." This would be the period 1407-1367 B.C. At the beginning of this time the initial period of the conquest of Canaan took place; this occurred during the first seven years (Joshua 14:7-10, Deuteronomy 2:14). During this 40 year period the people served Cushanrishathaim, King of Mesopotamia, for a period of eight years (Judges 3:8). Their deliverer was Othniel, son of the younger brother of Caleb (Judges 3:9).

The next chronological notice concerning Israel is that in Judges 3:30, "So Moab was subdued that day under the hand of Israel. And the land had rest fourscore years." This was the period from 1367 B.C. to 1287 B.C. During this period Israel served Eglon, King of Moab 18 years (Judges 3:14). Their deliverers were Ehud (Judges 3:15) and Shamgar (Judges 3:31).

The next chronological notice is that of Judges 5:31, "And the land had rest forty years." This was the period from 1287 B.C. to 1247 B.C. During this period Israel was oppressed by Jabin, King of Canaan, who reigned in Hazor and oppressed the Israelites for 20 years (Judges 4:3). Israel's deliverers were Deborah and Barak (Judges 4 and 5).

The next notice is found in Judges 8:28, "And the country was in quietness forty years in the days of Gideon." This was the period from 1247 B.C. to 1207 B.C. Near the beginning of this period Israel was given into the hands of Midian for seven years (Judges 6:1). Their deliverer was Gideon. His death in 1207 B.C. ended this period. This is a very important date in our study, as we shall see later.

Abimelech, a son of Gideon by a concubine (Judges 8:31), reigned as king for three years (Judges 9:22). This was the period from 1207 B.C. to 1204 B.C. To ensure his reign, he killed his 70 brothers

(Judges 9:5). He was killed by a millstone dropped upon him by a woman (Judges 9:53). Abimelech's evil and short-lived kingship was followed by the judgeship of Tola who judged Israel 23 years, from 1204 B.C. to 1181 B.C. (Judges 10:1-2).

After Tola came Jair the Gileadite, who judged Israel 22 years (Judges 10:3), 1181 B.C. to 1159 B.C. Apparently during this period Israel was oppressed for 18 years by the Philistines and the Ammonites (Judges 10:7-8).

Jair was followed by four judges who ruled successively.

Jephthah	6 years	(Judges 12:7),	1159-1153 B.C.
Ibzan	7 years	(Judges 12:9),	1153-1146 B.C.
Elon	10 years	(Judges 12:11),	1146-1136 B.C.
Abdon	8 years	(Judges 12:14),	1136-1128 B.C.

The next chronological notice is that of Judges 15:20, where we read that Samson judged Israel 20 years, 1128 B.C. to 1108 B.C. We read in Judges 13:1 that during this time in Israel's experiences, "And the children of Israel did evil again in the sight of the LORD; and the LORD delivered them into the hand of the Philistines forty years." This oppression probably began during the time of the judges Ibzan, Elon, and Abdon. Samson's birth was predicted to his mother, and she was told that her son would begin to deliver Israel from the hand of the Philistines who were probably their oppressors at that time (Judges 13:5).

For our next chronological notice, we must leave the Book of Judges which closes with no more information of this nature and go to the Book of I Samuel. We read in I Samuel 4:18 that Eli had judged Israel 40 years. This was the period from 1108 to 1068 B.C. The Bible gives us sufficient information about Eli and his contemporaries that we are able to insert a few bits of interesting information into our study. These are interesting but not in themselves important to our study. We know, for example, that since Eli was 98 years old at death, he was born in the days of Jair, possibly even before Samson's birth. He must have been priest in Shiloh at the time Samson was judge. He is first introduced in the Bible as a priest in I Samuel 1, when Hannah came to the temple at Shiloh to pray. Eli could well have been fifty or more at the time Samuel was born inasmuch as Eli's two sons already officiated as priests (I Samuel 1:3). He became official judge of the land at the age of 58. This was probably about the time Samuel came

to the temple as a weaned child for it is reported that Samuel was an old man at the time Saul became king (I Samuel 8:5). We shall see that Saul became king about 60 years after Eli became judge. Eli's judgeship came to a tragic end when the Philistines routed the Israelites, killed his two sons, and captured the ark. The news of the captured ark was the tidings that resulted in Eli's death (I Samuel 4:18).

Returning to the chronological sequence, we next discover that the ark was in the hands of the Philistines seven months (I Samuel 6:11). This was seven months of the year 1068 B.C. or seven months beginning the later part of 1068 B.C. and continuing in the early part of 1067 B.C. For our chronological sequence, all other notices from the entrance into Canaan until David are given in years only. Therefore, we may round off this seven months period to one year, 1068-1067 B.C., to follow the pattern established by the previous chronological notices.

In I Samuel 7:2, we read the final chronological notice. The ark was returned to Israel at Kirjathjearim at the end of the seven months period. In this verse we read that 20 years passed after this event:

And it came to pass, while the ark abode in Kirjathjearim, that the time was long; for it was twenty years: and all the house of Israel lamented after the LORD.

Since the next major event in Israel's history is the selection of Saul to be king, and the beginning of his reign is the next Biblical chronological notice (I Samuel 13:1), we can conclude that this 20 years was the period when Samuel judged Israel. His judgeship, of course, ended when Saul became king. This 20-year period is 1067 B.C. to 1047 B.C. The 40 year reign of Saul continued then from 1047 B.C. to 1007 B.C. when David came to the throne. David's 40 year reign covered the period 1007 B.C. to 967 B.C. In the year 967 B.C., David died and the foundation of the temple was laid as we determined earlier in this chapter.

Thus, we have seen again how the Scriptural record provides precise and adequate information to permit an exact chronology, even through the troubled period of the judges.

Jephthah's Estimate of Time

Two other statements are found in the Bible that relate to the period of the judges. Let us briefly examine these to determine how

they relate to the chronology we have now established. The first is a statement in Judges 11:26 where we read that the judge Jephthah declared that the Israelites dwelt in Heshbon, Aroer, and the cities on the banks of the Arnon, three hundred years. Since we know he was judge from 1159 B.C. to 1153 B.C., we can see that 300 years was a very good estimate of time. Three hundred years earlier than 1153 B.C. is 1453 B.C. The Israelites were in the wilderness sojourn while they dwelt in Heshbon (Numbers 32:37) and dwelt in the valley of Arnon (Deuteronomy 3:12). Since they dwelt in these cities during their wilderness sojourn (although near the end of the sojourn), and since the wilderness sojourn began in 1447 B.C., Jephthah's statement of 300 years was a good estimate.

Paul's Estimate of Time

The second reference which relates to the period of the Judges is Acts 13:19-20:

And when he had destroyed seven nations in the land of Canaan, he gave them their land as an inheritance, for about four hundred and fifty years. And after that he gave them judges until Samuel, the prophet.

Literally, these verses say, "and having destroyed seven nations in the land of Canaan gave as an inheritance the land of them about four hundred and fifty years. And after these things He gave judges until Samuel a prophet."

From this notice, we gather that a period of about 450 years transpired from the time that Canaan was given as an inheritance to Israel until Solomon's reign ended. This is because at the end of Solomon's reign, Israel was shattered into two nations and the land was no longer an inheritance enjoyed by the whole nation of Israel as a cohesive unit. They were given the land at the time Canaan was subdued by Joshua.

We shall see that Paul's estimate of about 450 years was a valid approximation. To check it we must first discover when Canaan was subdued. We find in Joshua 24:11 that after Joshua had divided the land, he declared:

And ye went over Jordan, and came unto Jericho: and the men of Jericho fought against you, the Amorites, and the Perizzites, and the Canaanites, and the Hittites, and the Girgashites, the Hivites, and the Jebusites; and I delivered them into your hand.

These are the same seven nations recorded in Deuteronomy 7:1-2 which God predicted would be defeated under God's leadership. Therefore, they must be the nations to which Paul refers when he speaks of seven nations having been destroyed in the land of Canaan. How can we determine when Joshua spoke of the fact that they had been defeated? We know it was before Joshua's death, when he was old and advanced in years (Joshua 23:1). He had just divided the land of Canaan amongst the tribes, giving each tribe a part of the land as an inheritance. This is discussed at length in the Book of Joshua beginning with Chapter 13. Joshua 13:1 also says that he was old and advanced in years.

We find clues concerning the timing of the division of the inheritance when Joshua was old in Joshua 14:7 and Joshua 14:10. In Joshua 14:7 Caleb says:

Forty years old was I when Moses the servant of the LORD sent me from Kadeshbarnea to spy out the land; and I brought him word again as it was in mine heart.

And in verse 10 he says:

And now, behold, the LORD hath kept me alive, as he said, these forty and five years, even since the LORD spake this word unto Moses, while the children of Israel wandered in the wilderness: and now, lo, I am this day fourscore and five years old.

Then from Deuteronomy 2:14 we discover that Israel continued in the wilderness 38 years after Kadeshbarnea. Since Caleb spoke his words 45 years (85 minus 40) after Kadeshbarnea, he spoke seven years after Israel entered Canaan. Since they entered Canaan in 1407 B.C., these words of Caleb were uttered 1400 B.C. We may conclude that the beginning of the time, spoken of by Paul in Acts 13:19, "And when he [God] had destroyed seven nations in the land of Chanaan, he divided their land to them by lot," is about the same time that Caleb spoke in Joshua 14. This was about 1400 B.C. We also know that the year of Solomon's death was 931 B.C., 469 years later. Thus, we see that Paul was correct when he spoke of 450 years.

Summary

We began this chapter by making reference to I Kings 6:1 where the Bible declares that there were 480 years from the Exodus to the time of the laying of the foundation of Solomon's temple. We have

discovered that this is in exact accord with the chronology of the period of the judges. The Exodus occurred in 1447 B.C. The foundation of the temple was laid 480 years later, in 967 B.C. A recapitulation of this 480-year period, as we have determined by Biblical reckoning, is outlined as follows.

Chronology of the Judges

The Exodus	1447 B.C.
Entrance into Canaan	1407 B.C.
Initial 40 year period in Canaan During this period the conquest of Canaan occurred under Joshua and Othniel delivered Israel	1407-1367 B.C.
Next 80-year period in Canaan During this period Ehud and Shamgar delivered Israel	1367-1287 B.C.
Next 40 year period in Canaan Deborah and Barak were deliverers during this period	1287-1247 B.C.
Gideon judged	1247-1207 B.C.
Abimelech ruled	1207-1204 B.C.
Tola judged	1204-1181 B.C.
Jair judged	1181-1159 B.C.
Jephthah judged	1159-1153 B.C.
Ibzan judged	1153-1146 B.C.
Elon judged	1146-1136 B.C.
Abdon judged	1136-1128 B.C.

Samson judged	1128-1108 B.C.
Eli judged	1108-1068 B.C.
Ark in Philistines' hands	1068-1067 B.C.
Samuel judged	1067-1047 B.C.
Saul reigned as king	1047-1007 B.C.
David reigned	1007-967 B.C.
Solomon reigned	971-931 B.C.
Foundation of temple laid in fourth year of Solomon's reign	967 B.C.

NOTES:

¹ See Appendix II concerning the apparent inconsistency of the declaration “the land had rest . . . years” with the fact that the conquest of Canaan took place during this first 40-year period of rest. Moreover, during the entire 200 year period when it is recorded that the land had rest there were repeated oppressions during which there could not have been real rest in the land.

Chapter 6

The Tower of Babel

The absolute chronology of man presented in this volume should be of help and interest to all who are concerned with the history of man and this world. Any thinking person surely wonders, however, how this chronology relates to the evidence produced by secular sources. Much of the secular evidence concerns events in historical time (history since the beginning of writing).

By comparing written evidence from many early civilizations, scholars have arrived at a chronology of man in historical times that appears accurate from within margins as small as ten years to as great as a few hundred years, depending upon the antiquity and nature of the evidence. If, as we shall see, the early writings made reference to astronomical events, it has been possible to date historical events within a few years or at most a few decades. This kind of evidence is rare indeed; but it has been possible to date many events written in ancient records, such as lists of kings, with reasonable accuracy by relating them to the points in time that were established by astronomical notices. Let us briefly look at the evidence and conclusions offered by secular sources and compare them with the Biblical chronology.

The First Civilization

Both archaeological and Biblical evidence support the conclusion that the earliest civilizations were located in the present nation of Iraq.

Albright writes:

Archaeological research has established that there is no focus of civilization in the earth that can begin to compete in antiquity and activity with the basin of the Eastern Mediterranean and the region immediately to the east of it . . . The Obeidan is the earliest clearly defined culture of Babylonia, where we find its remains

underlying nearly all of the oldest cities of the country such as Ur, Erech, Lagash, Eridu, etc. This proves that the occupation of the marshlands of Babylonia by human settlers came rather late in history of the irrigation culture, probably not far from 3700 B.C.¹

Thus, the archaeological evidence shows that the location of the first civilization after the flood was in the Mesopotamia Valley. This information agrees exactly with the Bible which reports that the first cities were Babylon, Erech, Nineveh, etc. (Genesis 10:10-11).

Conclusions based on archaeological evidence and on Biblical evidence also agree on the date of the earliest civilizations. The date of 3700 B.C. suggested by Albright for the beginning of the earliest city civilization is apparently satisfactory to most archaeologists. M. B. Rowton writes that in Uruk, one of the most ancient Mesopotamia sites, the earliest level of monumental buildings is that of the level known as Uruk V. He concludes "the beginning of Uruk V can plausibly be dated at 3500 B.C."² The dates 3500 or 3700 B.C. are estimates arrived at by starting at a more clearly defined historical point and allowing a reasonable period of time for each level of prior occupation. Thus, the archaeological evidence appears to indicate that prior to about 3700 B.C., there was no substantial culture anywhere in the world. The period prior to the time of writing is known as the Prehistoric Age or the Stone Age. About 3700-3500 B.C., the first great civilization began to be formed in the plains of Sumer in the land of Babylon, Erech, Ur, etc.

Evidences have been found of ancient nomadic tribes that appear to have existed earlier than 3700 B.C. There is also evidence that a city such as Jericho could be as old as 10,000 years. These evidences, however, do not point to a culture or a civilization that even remotely could have been as important as ancient Babylonia. It might be noted, too, that the dating of archaeological evidence prior to about 3500 B.C. is almost completely dependent upon carbon 14 dating. It can be shown that carbon 14 dating becomes quite undependable when used for dating organisms older than 4000 years. Thus, there is great reason to believe that a carbon 14 date of 10,000 years shows an actual age more on the order of 6000 years.³

Turning now to the Biblical evidence, we discover that the first notice of building activity after the flood is that of Nimrod, whose kingdom began with Babel, Erech, and Accad, all in the land of Shinar (Genesis 10:10). But when did Nimrod come upon the scene? His

genealogical descent is that of Noah, Ham, Cush, and Nimrod (Genesis 10:1, 6, 8). The Bible offers no timetable for this side of the family tree but it does offer precise information regarding another branch, that of Noah, Shem, Arpachshad, and Shelah. When we study the genealogical statements of the Bible we note that very often two branches of the tree are offered. One is of the descendants who lead eventually to Christ, about which precise timetables are given. The second is the genealogical descent of that side of the family which turned away from God. Thus, between Adam and Noah the Bible records ten generations beginning with Adam and Seth and ending with Lamech and Noah, a period of about 6000 years, as we have seen. However, simultaneously, a genealogy comprised of some eight generations is recorded in Genesis 4. This descent is that which comes through Cain and includes those who were the mighty in the land or the sons of men rather than the sons of God. Each generation on Cain's side of the family tree appears to be closely parallel to the generations through Seth.

The parallel character of the sons on God's side with those on man's side is emphasized by information concerning later generations. Ishmael, the ancestor of the Arabs, became the father of twelve princes (Genesis 25:16), but so did his half brother Isaac through his son Jacob. The twin boys, Esau and Jacob, again established the two lines. Jacob lived to be 147 years of age and became the forerunner of a great nation. Esau's death age is not given but he was 120 when he and Jacob buried father Isaac (Genesis 25:26, 35:29); so he, too, lived to a ripe old age and became the father of an important nation, the nation of Edom.

Therefore, we may reasonably conclude that Ham and Shem, being brothers, were obviously contemporaries, that Arpachshad and Cush were nearly contemporaries, and that Shelah and Nimrod were probably men of the same period of history. Thus, if we know Shelah's date, we can surmise that Nimrod's was close to the same date. We are interested in Nimrod because the Biblical history indicates that he was the founder of the civilization of what is now Iraq or what was then the plains of Shinar or Sumer or Mesopotamia.

As we saw in Chapter 4, Shelah's date was 4050 B.C. to 3617 B.C., and Nimrod must have lived about this time. The Bible suggests a date of from 4050 to 3617 for the founding of the great cities of the Mesopotamia Valley. Thus, the date suggested by archaeology evidence (3700-3500) accords very well with the Biblical statement.

It is of more than passing interest in this connection that the name Nimrod has left its mark on the Mesopotamia Valley. The great archaeologist George Rawlinson writes:

The remarkable ruin generally called Ahkerhuf, which lies a little to the south-west of Baghdad, is known to many as the “Tel-Nimrud;” the great dam across the Tigris below Mosul is the “Suhr-el-Nimrud,” one of the chief of the buried cities in the same neighborhood is called “Nimrud” simply; and the name of “Birs-Nimrud” attaches to the grandest mass of ruins in the lower country.⁴

We may now begin to see how the secular record helps us to inquire in greater detail regarding the accurate but sometimes sketchy facts offered in the Bible.

The Confusion of Tongues

The next bit of history that should be interesting to investigate is the Tower of Babel. Is there any secular evidence that relates to the account of this confusion of tongues as set forth in Genesis 11? There is indeed, as we shall see.

First of all, we might note that the account of Genesis 11 indicates that prior to this time in history, all men spoke one language. Moreover, the leading civilization was located in the plains of Shinar or Sumer. The citizens of these plains desired to be the one great civilization of the world, which prompted the building of the great tower. This in turn brought God’s judgment upon the people so that they were separated into various nations.

The time of the beginning of the second important civilization of antiquity also would have real significance. We would expect it to be after the Tower of Babel. We know that the event of the Tower of Babel occurred during the generation of Peleg; we read in Genesis 10:25, “And unto Eber were born two sons: the name of one was Peleg; for in his days was the earth divided.” The Bible does not conclusively identify the phrase “the earth divided” with the Tower of Babel. However, most theologians do make this identification. Actually, it might have reference in addition to the physical division of continental masses.⁵

We have determined that Peleg’s generation was from 3153 B.C. to 2914 B.C. so this would be the time of Tower of Babel. Therefore,

we would expect no civilizations other than Babylonia to have an antiquity greater than about 3150 B.C.

All archaeological evidence points to Egypt as the second great civilization to appear. While there was a primitive culture in Egypt prior to the First Dynasty, the uniting of all of Egypt under Pharaoh Menes to form the First Dynasty was the signal for a major burst in the arts of civilization. Albright writes:

It is now certain that the level of Egyptian culture remained considerably below that of Mesopotamia until the First Dynasty, when under strong indirect influence from the Euphrates Valley it forged ahead of the latter in a breath-taking spurt.⁶

Interestingly, the new civilization of Egypt beginning with the First Dynasty was patterned after the Babylonian (Mesopotamia) culture. Albright continues:

The close of the Predynastic Age and the beginning of the Thinite (period of first two dynasties)⁷ period witnessed a sudden burst in the arts of civilization. This seems to have been connected in some way with an increase of cultural influence from Asia, since there are numerous exact parallels between Mesopotamia and Egyptian culture at this time, the former being demonstrably older and more original in nearly every instance.⁸

The date of the beginning of the First Dynasty under Menes is calculated to be somewhere between 2800 B.C. and 3100 B.C. Early archaeologists such as Breasted dated his reign at about 3400 B.C. As new archaeological evidence was uncovered, this date was moved forward to about 3000 B.C. Albright believes 2850 B.C. is a good estimate.⁹ William C. Hayes suggests 3100 B.C. is the best date presently available.¹⁰

When we consider the above information we are struck by the fact that prior to about 3100 B.C. to 2850 B.C., only one civilization of consequence existed in the world. That was the nation of Babylonia on the plains of Shinar. At that time in a sudden burst of progress Egypt grew to become a second great civilization, a civilization patterned after the first civilization. These dates are in almost exact agreement with the Biblical date for the Tower of Babel. Surely, the confusion of tongues as recorded in Genesis 11 sent thousands of people, skilled in all the arts and crafts of Mesopotamia, to Egypt and elsewhere. Thus, we see agreement between the sacred and the secular records through this indirect evidence of the timetable of the civilizations of antiquity.

Writing: A Result of Babel

Another great historical achievement, the beginning of writing, was at about the same time in history, and it, too, may be related to the confusion of tongues. The Mesopotamia Valley was the birth place of the first important civilization, and it was also the birth place of writing. Wooley writes:

All the archaeological evidence available seems to prove that true writing was first developed in southern Mesopotamia; and in view of the incalculable importance of the invention for human progress everywhere we are entitled to ask the further question, why was that invention made by the Sumerians rather than any other ancient people?¹¹

He continues:

It is not possible to trace the development of writing in Egypt with the same detail as in Sumer . . .; the simple but sufficient reason for this is that the Egyptians took over the principle of writing ready-made from the Sumerians.¹²

Although it cannot be proven conclusively, the early Sumerian writing probably became the foundation for all other systems of writing. Albright states:

Sumero-Accadian cuneiform was also used to write many other languages, Hittite (nasion or Nasion Horite), (Hurrian) Urartian (in Armenia), Cossean, and Elomite. It was further used occasionally for a number of known languages, such as Indo-Iranian, Canaanite (Hebrew), Egyptian, Aramic.¹³

Wooley declares:

The earliest examples of the Indus Valley script that have yet been found date to about the twenty-fourth century B.C. . . . that India owed its art of writing to the Sumerians cannot be proved, but it is highly probable.¹⁴

He states further:

On the whole it is more probable that the Chinese derived from Sumer the principle of writing.¹⁵

The timing of the beginning of writing could be highly significant. Archaeologists vary in their estimates as to when man first began to write. Some choose a date as early as 3500 B.C., although the oldest cuneiform documents that easily can be read must be dated

2800 B.C.¹⁶ In the light of the paucity of tablets dating earlier than 2800 B.C., many archaeologists believe writing began several hundred years later than 3500 B.C. or about 3000 B.C. Gelb writes:

The span of over one thousand years between the beginning of Sumerian writing at the start of the fourth millennium and the establishment of full writing around 2500 B.C., postulated by the high chronologists, has always seemed to me out of proportion with the realities of the Sumerian epigraphy. For that reason I have felt rather in sympathy with the low chronologists who proposed to reduce this span to about 400 to 500 years . . . the date of the earliest Sumerian writing should be set tentatively at about 3100 B.C.¹⁷

Perhaps many archaeologists guess at 3500 B.C. as a beginning point because it is also the approximate time when the Sumerians became a cohesive civilization. Gelb's conclusion, however, could be the more accurate.

The confusion of tongues in Sumer sometime between 3150-2900 B.C. could well have been the catalyst that produced writing. Before this dramatic, civilization-splitting event, all was secure. Only one language was spoken in all the world. Verbal communication was adequate and dependable. But then came a fearful event that shook the very foundations of that great civilization. Men could no longer understand each other. The application of the spoken word to clay tablets would provide insurance that this kind of happening would never destroy a culture again. The clay tablets would always prove to be a reference point. Surely we can see the possibility if not the probability of the connection between writing and the Tower of Babel.

The Ziggurats

One other bit of evidence seems to support the Biblical account of the Tower of Babel. Abundant evidence is available in the secular record regarding great temple towers, the ruins of which are found in many of the ancient cities of Mesopotamia. These huge structures called "ziggurats" could well be patterned after the original structure called in the Bible "the tower of Babel." One of the largest has been written about extensively. It was located in Babylon but only the bare outline of its foundations can still be seen. James MacQueen writes:

In an isolated position immediately opposite the main gate, but towards the west of the courtyard, stood the ziggurat or temple tower of Babylon. This mighty building, rising to a height of almost 300 feet, must have been a dominant feature of the Babylonian landscape, and certainly accounts for the Biblical narrative of the Tower of Babel. Only the ground plan was recovered by excavation, and there has been a great deal of scholarly argument on the details of the upper portion, but thanks to descriptions given by Herodotus and in contemporary inscriptions, the general shape of the building is clear. The tower was square in plan, and rose, probably in eight stages, to a temple at the summit. The lowest stage was 300 feet square and about 108 feet high, the second 256 feet square and 60 feet high. The third, fourth, and fifth stories were each about 20 feet high, with sides of 197 feet, 167 feet, and 138 feet. The size and shape of the sixth, seventh, and eighth stories are disputed, but it seems most probable that the sixth was 108 feet square and 20 feet high, while the seventh stage, 50 feet high, was no longer square but rectangular, measuring probably 79 feet by 69 feet. On top of this may have been a small “wardroom,” the dimensions of which are not known, forming an eighth story. . . . The whole of this structure was apparently faced with baked bricks over a core of unbaked bricks. The core of the first stage was 200 feet square, while the facing on all sides was 50 feet thick, and finished with the usual recesses between flat “towers.” The upper stories may also have been finished in this way, but this is not certain.¹⁸

This great temple tower, also known as Etemenanki, “the House of the Foundation Platform of Heaven and Earth,” could well have been constructed about 3100 B.C., which is the approximate Biblical date of the Tower of Babel.

In this connection there appears to be two interesting facts. The first is related to an ancient tablet which makes a rather provocative statement. In the book *Bible and Spade* the author states:

George Smith also quotes a remarkable fragment relating to the collapse of such a ziggurat. “The building of this temple offended the gods. In a night they threw down what had been built. They scattered them abroad, and made strange their speech. The progress they impeded.”¹⁹

The Bible makes no reference to the destruction of the city and tower stating only that “they left off building the city” (Genesis 11:8). That a physical disaster accompanied the confusion of tongues is, of course, a distinct possibility since the earth was divided during Peleg’s generation (Genesis 10:25), and, as we shall see in Chapter 14, a physical division of earth-shattering proportions could have accompanied the confusion of tongues.

The second interesting and perhaps significant fact relative to the Tower of Babel is a curious change in the construction of bricks. Wooley speaks of this:

The Sumerians, and the Babylonians after them, achieved a mastery of brick-building technique so complete that they had no need to look for any other material. A few early experiments, such as that of moulding bricks in cement, were never followed up. It is true that the size of bricks changed in different periods, but the changes were generally quite small, practically all the varieties coming within the limits of $11\frac{3}{4}$ inches to $13\frac{3}{4}$ inches square. The only serious departure from the norm is one that archaeologists have found difficult to explain. With the beginning of the Early Dynastic period the ordinary flat brick is suddenly and uniformly replaced by the “plano-convex” type—a brick rectangular in plan but rounded on the top like a bun—which continues in use for several centuries. It is a clumsy brick, unhandy for laying and requiring much more mortar than does a flat brick, and there is no practical justification for it. It has been suggested that it was introduced by newcomers to Sumer who in their own country had been accustomed to building in stone and so moulded bricks in the form of pebbles; but builders in stone prefer flat flakes to rounded pebbles, and no new people came into Sumer at the beginning of the Early Dynastic period. It is possible that the reason for the change was not technical but sentimental. During the Jamdat Nasr period Sumer had been ruled by foreign interlopers, and their regime seems to come to a violent end brought about by a nationalist revolt. The Jamdat Nasr people had been great builders, and the first act of the new governments was to destroy their buildings and set up new ones; for these ‘plano-convex’ bricks were used, for the first time, and perhaps they symbolized the complete break with the immediate past. Certain it is that long after practical considerations had brought the flat brick back into favour with builders a superstitious reverence was still attached to the bun-shape type.²⁰

The Early Dynastic period spoken of by Dr. Wooley was a period in history that began about 3000 B.C. Could the awe-inspiring events of Genesis 11 have occasioned possible superstitions in regards to the forming of the bricks? The Bible does make reference to making bricks in connection with the Tower of Babel (Genesis 11:3). The archaeologists' discoveries that there was a significant change in the art of brick making, that it continued for several centuries, and that this change occurred at a time simultaneous with the Biblical chronology of the Tower of Babel surely would seem more than coincidental. The Bible says simply in Genesis 11:8:

So the LORD scattered them abroad from thence upon the face of all the earth: and they left off to build the city.

The superstitious dread that filled these builders as a result of God's dramatic intervention in their building project could well have induced such a construction change.

We have seen that when we reach back in secular history as far as written records will allow, and even further by use of artifacts and other data, there is wonderful synchronization with the Biblical chronology. We have seen that a number of archaeological discoveries are in startling agreement with the Bible chronology. Not only were the first great city civilizations discovered in Mesopotamia, as the Bible declares, but many of these ancient ruins bore the name Nimrod, the Biblical builder of these ancient cities. Moreover, the archaeological date 3700-3500 B.C. for the beginnings of these great cities agrees very closely with the Biblical date.

When we considered the Tower of Babel, we saw that a number of important archaeological discoveries relate directly to the Tower of Babel and the confusion of tongues that followed it. If concordance of the archaeological record is found with that of Biblical statements to a point 2000 years before Moses, it seems probable that the sacred record must be accurate history all the way back to creation. If the sacred record can be read as history back to the days of Nimrod, we surely should be able to read it as history back to the days of Adam.

The Maya Connection

An interesting time correlation is found in secular records in connection with the Maya civilization that existed hundreds of years ago in Central America. Dr. Howard LaFay wrote in *National Geographic Magazine*:

... the Maya practiced an astronomy so precise that their ancient calendar was as accurate as the one we employ today; they plotted the courses of celestial bodies, and to the awe of the faithful, their priests predicted both solar and lunar eclipses. They calculated the path of Venus -- an elusive planet that is by turn a morning and evening star -- with an error of only 14 seconds a year. The Maya originated a complex system of writing and pioneered the mathematical concept of zero.²¹

The Maya produced square or rectangular elements called glyph blocks, which made up separate units of an inscription. These inscriptions were frequently calendars and were found on stelae and monumental buildings such as temples. Archaeologists have correlated the Maya calendar with our calendar to the extent that precise dates recorded in the Maya writings can be expressed in terms of our calendar. The curious thing is that these calendars frequently included a foundation date. Dr. George E. Stuart writes:

... the beginning of the Maya calendar, a date that most Mayanists agree corresponds to our own August 11, 3114 B.C. What, one can only wonder, was the high significance of that day, long before Maya history began? ²²

Archaeologists who study the ancient civilization of Maya puzzle about the date 3114 B.C., but the Bible gives the answer.

Significantly, the Bible indicates Peleg's period was from 3153 to 2914 B.C., so that Peleg would have been 49 years of age in the year 3114 B.C., the beginning year of the Maya calendar. The Bible records that it was during Peleg's period that the earth was divided. Genesis 10:25:

And unto Eber were born two sons: the name of one was Peleg; for in his days was the earth divided; and his brother's name was Joktan.

The division of the continents occurred, therefore, during Peleg's lifetime. Most people of that day would have lived in one part of the huge continent that existed until the time of Peleg; however, some individuals would have lived in that part of the original continent which became Central America.

This was a gigantic event; the division of the original continent was equivalent to the beginning of time for these nomads. The awful event of part of the continent moving across the ocean floor and the resultant mountain building must have been absolutely astounding

and catastrophic to the progenitors of the Maya people. It is not surprising that in their calendar they placed a foundation date; it is not surprising that the date precisely equates with the Biblical statement that in the days of Peleg the earth was divided.

NOTES:

¹ William Foxwell Albright, *From the Stone Age to Christianity*, Doubleday & Co., Inc., 1957, p. 32.

² M. B. Rowton, *On The Cambridge Ancient History*, Cambridge University Press, 1964, pp. 57-58.

³ See Chapter 12 for an examination of this dating method.

⁴ George Rawlinson, *Egypt and Babylon*, New York, John W. Lovell Co., 1885, p. 9.

⁵ This subject is beyond the scope of this discussion and will be treated in Chapter 14.

⁶ William Foxwell Albright, *From Stone Age to Christianity*. Doubleday & Co., Inc., 1957. p. 142.

⁷ *Ibid.*, p. 157.

⁸ *Ibid.*, p. 156.

⁹ *Ibid.*, p. 157.

¹⁰ William C. Hayes. "Chronology: Egypt, Western Asia, Aegean Bronze Age," in *The Cambridge Ancient History*, Cambridge University Press, 1964, p. 4.

¹¹ Wooley, Sir Leonard. *The Beginnings of Civilization*; The New York American Library, 1965, p. 364.

¹² *Ibid.*, p. 378.

¹³ Albright, *From Stone Age to Christianity*, p. 36.

¹⁴ Wooley, *The Beginnings of Civilization*, p. 374.

¹⁵ *Ibid.*, p. 376.

¹⁶ Albright, *From Stone Age to Christianity*, p. 147.

¹⁷ Ignace J. Gelb, *A Study of Writing*, University of Chicago Press, Chicago, 1952, p. 63.

¹⁸ James G. MacQueen, *Babylon*, Frederick A. Praeger Publishers, 1964, p. 174.

¹⁹ Stephen L. Gaiger, *Bible and Spade*, Oxford University, University Press, 1936, p. 29.

²⁰ Wooley, *The Beginnings of Civilization*, p. 262.

²¹ Dr. Howard LaFay, "The Maya, Children of Time," in *National Geographic Magazine*, December, 1976, p. 729.

²² Dr. George E. Stuart, "The Maya Riddle of the Glyphs," in *National Geographic Magazine*, December, 1976, p. 779.

Chapter 7

Joseph and Pharaoh

We have looked briefly at the secular records which relate to the earliest historical events following the flood. We have seen that the pages of the archaeologist and historian do give considerable information that relates to the formation of the first great civilization, on the plains of Shinar. This information has been shown to be in close agreement with the Biblical record of the dispersal of that civilization by God's intervention with the confusion of tongues. But there are other points of contact between the Scriptures and the secular pages.

The next great event in the Bible is the call of Abram from Ur of the Chaldees, which is followed by the detailed record of the patriarchal experiences of Abraham, Isaac, and Jacob. Is there contact between the events of the lives of these men and the secular record? We know from the Biblical chronology that Sodom and Gomorrah and the other cities in the area of what is now the Dead Sea were destroyed when Abraham was 99 years old (Genesis 17, 18), in the year 2068 B.C. The secular record indicates that about 2000-2300 B.C. there was an abrupt end of civilization in this area. Albright writes:

The great site of Bab-ed-Dra on the Dead Sea probably belongs to the age of Sodom and Gomorrah; its remains date from about the last third of the third millennium, when occupation came to an abrupt close.¹

The archaeologist Nelson Glueck, who made a thorough survey of the Southern Transjordan east and south of the Dead Sea, discovered that in about the 20th or 19th centuries B.C., these villages were abandoned for some mysterious reason. These finds agree with the Biblical record that prior to 2068 B.C., the whole area was a flourishing valley like the garden of the Lord in Scripture (Genesis 19:24-28). Therefore, we see chronological synchronization in this event.

Is there more precise correlation between the secular and sacred records? When we turn to the history of Joseph, we discover a point of contact between the two records that is far more definitive. Joseph lived in Egypt in the first year of one of the greatest of the pharaohs of the Twelfth Egyptian Dynasty, which is also known as the Middle Kingdom. The year of the accession of this Pharaoh, Sesostris III, can be calculated from astronomical data. When we compare his accession year with the Biblical record, we discover identical concordance with the Biblical chronology.

The Secular Records Date

Let us first discover the accession year of Sesostris III by means of the astronomical and archaeological evidence.

A tablet has been discovered from the reign of Sesostris III that indicates that in the seventh year of his reign there was a Sothis festival on the sixteenth day of the eighth month. The festival celebrated a heliacal rising (simultaneous with the sun) of the star Sothis (Sirius).² This gives us a time clue, for a heliacal rising of Sirius occurs on any particular day of the year once every 1460 years. Dr. Jack Finegan records that in A.D. 139, a celebration occurred on the first day of the first month (the month Troth) commemorating such a rising.³ Since it took 1460 years for the festival to pass through the Egyptian calendar to come again to the same day and month, the previous time when the Sothic Festival was celebrated on the first day of the first month would have been 1322 B.C. on July 20. Jack Finegan arrives at a date of 1321 B.C. as does Breasted. The conclusion of 1321 appears to be in error by one year, apparently due to a lack of consideration of the fact that there is a loss of one year in going from B.C. to A.D. G. H. Wheeler,⁴ however, arrives at a date of 1322 B.C., as we have calculated.

Since Sesostris III commemorated a Sothic rising on the 16th day of the eighth month, we can work backward from July 20, 1322 B.C., to discover the year when this celebration occurred. There are 140 days between Thoth 1 (July 20) and the sixteenth day of the eighth month. Since the Sothic rising shifts one day each four years, we can multiply this 140 days by four to give 560 as the number of years earlier than 1322 when the festival was held during the seventh year of the reign of Sesostris III. Consequently it was the year (1322 + 560) or 1882 B.C. when the recorded festival was held. Since this was the seventh year of Sesostris III, his first year was 1888 B.C.

The Biblical Records Date

Let us see if we can find information in the Bible that could possibly relate to the first or accession year of Sesostris III. When we study the experiences of Joseph we do find the desired facts. The clue that supplies the answer is found in Genesis 41:13 which reads as follows:

And it came to pass, as he interpreted to us, so it was; me he restored unto mine office, and him he hanged.

The background to this verse is as follows: Joseph was cast into prison because of his refusal to sin with Potiphar's wife. There he correctly interpreted the dreams of the chief butler and the chief baker.

The dream revealed that in three days the butler was to be restored to the butlership and the baker was to be taken from prison and hanged. These events actually took place on the third day when pharaoh gave a birthday feast. Joseph's request to the butler was that he would remember him to the pharaoh (Genesis 40:14). Chapter 40 closes with the information that the chief butler forgot about Joseph. Then two whole years passed (Genesis 41:1), after which pharaoh had his dream of the seven fat and skinny cows and the seven plump and thin ears of corn. Finally, because pharaoh was seeking for an explanation to his dream, the butler remembered poor Joseph in the dungeon. His speech to pharaoh is very significant. Genesis 41:9-13:

Then spake the chief butler unto Pharaoh, saying, I do remember my faults this day: Pharaoh was wroth with his servants, and put me in ward in the captain of the guard's house, both me and the chief baker: And we dreamed a dream in one night, I and he; we dreamed each man according to the interpretation of his dream. And there was there with us a young man, an Hebrew, servant to the captain of the guard; and we told him, and he interpreted to us our dreams; to each man according to his dream he did interpret. And it came to pass, as he interpreted to us, so it was; me he restored unto mine office, and him he hanged.

The Pronoun "He" Conveys Significant Information

In Genesis 41, verse 9, we read that the chief butler, who had been freed from prison two years earlier, was talking to pharaoh and said that pharaoh (verse 10), had put both the butler and the baker into

prison when pharaoh was angry. To speak directly to pharaoh as he does in verse 10, using the proper name or title “pharaoh” rather than a personal pronoun “you” was very common. For example, Moses used this type of address in Exodus 8:29, where we read:

And Moses said, Behold, I go out from thee, and I will intreat the LORD that the swarms of flies may depart from Pharaoh, from his servants, and from his people, to morrow: but let not Pharaoh deal deceitfully any more in not letting the people go to sacrifice to the LORD.

Verse 13 of Genesis 41, however, presents a very difficult problem. When Moses was speaking to pharaoh about pharaoh, he either used his formal title “pharaoh” or he used the personal pronoun “you” (Exodus 8:9, 8:29). But never did Moses use the third person pronoun “he,” as the butler did when he was talking to pharaoh in verse 13. In fact, it makes no sense at all for the butler to talk to pharaoh about what he, the pharaoh, had done years before and then use the pronoun “he” as it is used in this passage, that is, unless the pharaoh who put the baker and butler in jail was a different pharaoh and not the one the butler was addressing in Genesis 41:9-13. If the pharaoh of Chapter 40 was the father of the pharaoh of Chapter 41, then the speech of the butler in Genesis 41:9-13 would make sense. Pharaoh (your father) put us in prison. He restored me and hanged the baker. This could happen only if there was a change in pharaohs between the time the butler was released from prison and the pharaoh’s dream two years later. This must have been the true state of affairs.

Since the Biblical account indicates this change in rulers, let us determine the Biblical timetable for this event. When we look at the Biblical chronology we discover that Jacob and his family entered Egypt 1877 B.C.⁵ This is in the second year of the famine (Genesis 45:6) which followed seven years of plenty as prophesied by Joseph. Since the seven years of plenty began virtually immediately following the interpretation of the dream (Genesis 41:32), the butler was speaking to the pharaoh nine years earlier than 1877 B.C. or 1886 B.C. Since the butler was let out of prison two whole years earlier than this, he must have been restored to office in the year 1888 B.C. Therefore, either in 1888, shortly after the pharaoh’s birthday feast, or in 1887 or early in 1886, the pharaoh who put the butler in prison died and his son ascended the throne.

We have discovered from the Biblical data that a pharaoh began to reign probably in the year 1888 B.C.⁶ He is the pharaoh who two years later made Joseph prime minister over Egypt. We also have discovered that the archaeological record indicates that a great pharaoh of the 12th Dynasty of Egypt named Sesostriis III came to power in 1888 B.C. Thus, we can know that the pharaoh who elevated Joseph to power could only have been Sesostriis III. How marvelous that, because of the Bible's precise and accurate use of the pronoun "he," in Genesis 41:13, we are able to discover this synchronization between the sacred and secular records.

Was the Father of Sesostriis III Murdered?

There is further evidence to indicate that there was a change of Egyptian kings soon before Joseph was freed from prison. The archaeological record indicates Sesostriis II, the father of Sesostriis III, in all probability reigned 19 years.⁷ His father, Amenemhet II, reigned 35 years and his grandfather, Sesostriis I, reigned 45 years. His great grandfather, Amenemhet I, reigned 30 years. His son, Sesostriis III, the pharaoh who made Joseph prime minister, reigned 38 years and his grandson, Amenemhet III, reigned 48 years.

In the light of the long reigns of the pharaohs before and after Sesostriis II, his 19-year reign seems to be quite short. Could it be that Sesostriis II came to an untimely end either through illness, or what is more likely, murder? Could it be that Sesostriis II feared for his life, perhaps afraid of death by poisoning, and therefore, he put the two men most capable of poisoning him, the chief butler and the chief baker, into prison? Or was he ill at the time and feared his end was near? Could it be that shortly after his last birthday feast, Genesis 40:20, during which the baker was hanged and the butler restored, those who wanted him murdered succeeded? Certainly, his early demise, together with all of the events surrounding the installation of the new pharaoh, could have caused the butler to forget his promise to remember Joseph.

Also, it could be that Sesostriis III began to reign, upon the early death of his father, as a comparatively young man and would have welcomed the possibility of help from the young Hebrew who was close to his age and who had already shown great wisdom. Furthermore, in Genesis 45:8, Joseph tells his brothers that he is as a father to the pharaoh, which further strengthens the point that Sesostriis III began his reign as a young king.

Let us return briefly to the timing of the reign of Sesostris III. With the evidence presently available, it appears that if we use only the secular information, it would be impossible to date the first year of Sesostris III's reign to one and only one year, although 1888 B.C. appears to be the most likely one. If the archaeological evidence is reliable that a Sothic Festival celebrating the heliacal rising of Sirius occurred on Thoth I, A.D. 139 (and the Biblical synchronization of Sesostris III attests to its reliability), then, as we saw earlier, such a festival also would have occurred on Thoth I, 1322 B.C., and on the 16th day of the 8th month in 1882 B.C. This date of the 16th day of the 8th month is in the archaeological record. However, such a festival could have been held on the 16th day of the 8th month of the three succeeding years, 1881, 1880, and 1879, because the heliacal rising of Sirius moves through the calendar one day each four years. The recorded festival occurred in the seventh year of the king, so his first year could have been 1888 or 1887 or 1886 or 1885. As we have seen, either 1888, 1887, or 1886 satisfy the Biblical record. Since a known festival celebrating a Sothic rising occurred in A.D. 139 and this brings us back to 1888 B.C. as the first year of Sesostris III, we suspect that the most weighty secular evidence points to it as being the correct year.

Moreover, the phrase "at the end of two full years," in Genesis 41:1, also places the emphasis on 1888, that is, if this phrase has any reference to the reign of pharaoh. The context surely suggests this for the verse is talking about pharaoh. Let us see why this is so. We know Jacob and his family arrived in Egypt about March/April of 1877. This is known because the Israelites left Egypt 430 years later to the very day (Exodus 12:41). They left on Nisan 15 which was about March/April, 1447 B.C. The Bible testifies that the famine had been in the land two years and five years remained. Genesis 45:6 reads:

For these two years hath the famine been in the land: and yet there are five years, in the which there shall neither be earing nor harvest.

The implication is that at the end of two years, just before the beginning of the remaining five years of famine, was when Jacob entered Egypt. Since we know he entered Egypt in March/April of 1877, the seven good years must have begun about nine full years earlier in March/ April, 1886, which would be the date of Joseph's release from prison. The release of the baker and butler two full years earlier would be March/April 1888 probably just before the death of

Sesostris II. His son, Sesostris III, would have reigned two full years when he had his dreams of the cows and corn. This sequence of time satisfies all of the Biblical possibilities.

The timetable would look like this. Sesostris III's first year ended Thoth I (August/September) 1888.⁸ He began to reign either as a co-regent with his father on Thoth I, 1889⁹ or he began to reign immediately upon his father's death. There is reason to believe his father died on the 14th day of the 8th month (March/April).¹⁰ The birthday feast of Genesis 40 occurred shortly before March/April of 1888. Two full years later (Genesis 41:1), Sesostris III who was now in the third year of his reign, had his dreams and released Joseph about March/April 1886 B.C. In the seventh year of Sesostris III, on the 16th day of the 8th month (March/April), 1882, Sesostris III celebrated the Sothic Festival. This coincided with the beginning of the 5th year of harvest plenty under Joseph's rule as prime minister. In March/April of 1879 B.C. the seven years of plenty came to an end and two years later in March/April, 1877, Jacob arrived in Egypt.

A Slave Becomes Prime Minister

Does it make any sense to believe that young Sesostris III would appoint a slave, Joseph, to the high office of prime minister or "grand vizier"? The answer comes from the archaeological record that indicates that, especially beginning with the 12th Dynasty during which Sesostris III reigned, large changes occurred in the method of government and in the appointment of those governed.

The practice of appointing those who were not of royal blood to high office was apparently common during the 12th Dynasty. Archaeologists have shown that men who were called "viziers" and who also often held the title of monarch ruled over the various provinces of Egypt. The office of monarch was often an hereditary office. During the 12th Dynasty, however, there were many changes. Simpson wrote:

The viziers of the Twelfth Dynasty evidently belonged neither to the ruling family . . . nor to the class of hereditary monarchs.

The Biblical picture of the increased power of the central government during Joseph's era is also verified by secular sources. Hayes declares:

It appears to have been in the reign of King Senwosret III of the Twelfth Dynasty that the administration of the provinces of Upper

and Lower Egypt was taken out of the hands of the hereditary monarchs and reorganized into units called “wrwt” which functioned as departments of the central government.¹²

Simpson also writes:

Students of the Twelfth Dynasty have frequently noted the loss of power suffered by them, onarchs in this reign. This situation certainly requires further study and perhaps reappraisal, but it cannot be seriously questioned.¹³

The archaeological evidence appears to indicate that about the time of Sesostri III the power of administration was transferred more clearly to the central government and out of the hands of the monarchs. This could have been because of the palace intrigue and ferment that resulted in his father’s death or it could have been a result of the total power which was given to Joseph, or both. In any case, the archaeological information that a central government ruled over all of Egypt beginning with the 12th Dynasty agrees precisely with the Biblical information that Joseph ruled over all of Egypt as prime minister.

Joseph’s Long Rule Accords with the Secular Data

When we examine the reigns of Sesostri III and his son Amenemhet III, we notice that both had long reigns (38 years and 48 years, respectively). Since Joseph died 80 years after he became prime minister, he died in 1806 B.C. He out-lived Sesostri III and died four years before Amenemhet III. Amenemhet III died in 1802 B.C.

The long period of Joseph’s life together with the long reigns of the pharaohs under whom he was prime minister would have contributed to a very stable government. Was this in fact the situation? The answer seems to be yes; during these two reigns the land was prosperous and tranquil. Breasted writes of this period:

It was thus over a nation in the fullness of its powers, rich and productive in every avenue of life, that Amenemhet III ruled; and his reign crowned the classic age which had dawned with the advent of his family.¹⁴

Amenemhet III was especially concerned about the water resources of Egypt. During his reign, a large dam and lake were constructed which is called Fayum Lake (Lake Moeris).¹⁵ It is interesting that the canal which supplied water to this lake was named

“Bahr Yusuf” or “Joseph’s Canal.”¹⁶ The archaeological evidence and the Scriptural record dovetail very neatly and provide an exact chronological reference point for this period of history.

In this chapter, we have discovered the exquisite reliability of the Bible all the way to a small pronoun, “he.” We should be encouraged by this to believe anew in the infallible, God-breathed nature of God’s Word. We should see afresh that the Bible is not only trustworthy when it speaks in the area of salvation, but also when it speaks on historical questions.

We saw how the Biblical account with its perfect chronology gives us an exact timetable for the secular account, which accords altogether with the sacred, once the data from both accounts have been synchronized. The practice of appointing grand viziers from other than the ruling class, the short reign of Sesostriis II, the long and tranquil reigns of Sesostriis III and Amenemhet III, all match the Biblical record. Even the construction of Joseph’s canal pointedly calls our attention to the beautiful relationship that exists between the sacred and secular records.

Let us continue our search to see if additional meshing of these two records is possible.

NOTES:

¹ William F. Albright, *Recent Discoveries in Bible Land*, in *Analytical Concordance of the Bible* (New York, Funk & Wagnalls, 21st ed., 1930), p. 27.

² W. F. Edgerton, “Chronology of the Twelfth Dynasty,” in *Journal of Near Eastern Studies* (Chicago, University of Chicago Press, 1942), pp. 308-309.

³ Jack Finegan, *Handbook of Biblical Chronology* (Princeton, Princeton University Press, 1964), p. 120.

⁴ G. H. Wheeler, “The Chronology of the Twelfth Dynasty” in *Journal of Egyptian Archaeology*, pp. 198-199.

⁵ See Chapter 4 of this volume.

⁶ See Appendix VI for further discussion on this date.

⁷ James H. Breasted, *A History of Egypt*, Charles Scribner & Sons, Second Edition (1937), pp. 598-599.

⁸ In early Egyptian history, the pharaoh's reigns coincided with the calendar year which began on Thoth 1. See Finegan, Jack, *op. cit.*, p. 25.

⁹ A. H. Gardiner. "Regnal Years and Civil Calendar in Pharaonic Egypt," in *Journal of Egyptian Archaeology*, Vol. 31 (1945), p. 27.

¹⁰ *Ibid.*, p. 27.

¹¹ W. V. Simpson. "Sobhemhet, A Vizier of Sesostri III," *J.E.A.*, Vol. 43 (1957). p. 27.

¹² William C. Hayes, "Notes on the Government of Egypt in the Late Middle Kingdom," *J.N.E.S.*, Vol. 12 (1953), p. 31.

¹³ Simpson, "*Vizier of Sesostri III*," p. 27.

¹⁴ James H. Breasted, *A History of Egypt*, Charles Scribner & Sons, second ed. (1937), p. 208.

¹⁵ *Ibid.*, p. 198.

¹⁶ Arthur Weigall, *A History of the Pharaohs* (New York, E. P. Dutton & Co., 1927), pp. 114-115.

Chapter 8

The Hyksos

We saw the precise agreement that exists between the secular and sacred records when we studied the timetable of the pharaoh, Sesostri III, who ruled during the middle of the 12th Dynasty of Egypt beginning in 1888 B.C. We saw that he was the young pharaoh who made Joseph prime minister or grand vizier.

Before we look for another point of chronological synchronization, we should spend a few moments with the secular record of the Egyptians during Israel's sojourn in Egypt. This is the period 1877 B.C. to 1447 B.C., as established by Biblical reckoning. It covers the period of Egyptian history from the middle of the 12th Dynasty to the middle of the 18th Dynasty. In this chapter, we will not discover any precise synchronization between the secular and sacred records, but we will provide some insights into puzzling archaeological evidence. We shall also provide a background for clearly identifying the pharaoh of the Exodus, who will be presented in the next chapter.

The Hyksos

Archaeological evidence reveals that during the period between the 12th and 17th Dynasties, there were foreign rulers over Egypt who were called Hyksos. They were apparently of Asiatic, Palestinian, or Hurrite origin as indicated by the names of the rulers, as well as by pottery and other archaeological evidence. Archaeologists have commonly described their entrance into Egypt as an invasion of some kind. They have also suggested that it was their presence that provided the sympathetic warm reception for Jacob and his family when they arrived in Egypt.

Since many Bible scholars as well as archaeologists believe that Jacob entered Egypt about 1720 B.C.¹ and that the Hyksos were already reigning at that time, it can be seen how most scholars indicate no identification between the Hyksos and the Israelites. Archbishop

Usher's chronology, which appears in the margins of many Bibles, undoubtedly has done much to foster this idea. He gives the date 1729 B.C. as the date of Joseph's arrival. This would place Jacob's arrival about 1720 B.C. which is near the time when the Hyksos began to reign as pharaohs. This has been a very unfortunate calculation by Usher.

I believe, however, that there is considerable evidence to show that the Hyksos were the Israelites. Let us examine this, because in so doing we will learn something about the conduct of the Israelites in Egypt and the conditions that led to their enslavement.

The Timing of the Hyksos

Most archaeologists believe that the Hyksos began to reign about 1720 B.C. The noted archaeologist, Raymond Weill, however, indicates that in his judgment the Hyksos were already present in the latter part of the 12th Dynasty. In a carving from the reign of Amenemmes IV, a representation of a god is shown who is like the god Seth or Sutekh. Weill wrote:

The assimilation is extremely remarkable, in view of the fact that in the older period there is no evidence of local cults of Seth in Lower Egypt, where he was first installed, in all likelihood by the "Hyksos" kings in Tanis, Avaris . . . This identification in the time of Amenemmes IV seems to indicate clearly that these Asiatic intruders and all the things that came with them were already present in the Delta during the Twelfth Dynasty; and it thus appears to demonstrate the truth of the view recently put forward that the settlement of these foreigners in Egypt began at least as early as that central part of the Middle Kingdom.²

He also wrote:

. . . It now appears . . . that the "Asiatic" or "Hyksos" period in Lower Egypt extends chronologically beyond the Dynasty of the Apopis at each end, and thus this Dynasty was but an episode in a much vaster development in time and perhaps in territory. Let me observe further in support of this statement that since 1929 it has been recognized the "Hyksos" period, that is to say, the incursion of Asiatics and Egypto-Asiatic culture in Lower Egypt, will have begun immediately after the end of the Twelfth Dynasty, if not during that Dynasty itself.³

Therefore, there is good reason to believe the Hyksos were already in Egypt during the 12th Dynasty (that is, prior to 1788 B.C.). This accords with our premise that the Hyksos were the Israelites; they were in Egypt since the middle of the 12th Dynasty. Possibly they did not assert themselves until many years after Joseph's death in 1806 B.C.

How Did the Hyksos Seize Power?

Many archaeologists believe that the mysterious people, who came into power between the 12th and 17th Dynasties of Egypt, invaded Egypt and seized power by force. However, within the last couple of decades, closer analysis of the archaeological evidence has begun to reveal that possibly there was no invasion of Egypt by the Hyksos at all. Rather, it appears that these foreign rulers simply represented a change in the ruling class from among those who lived in Egypt. Moreover, as we have stated, there is increasing evidence that the Hyksos were in Egypt as early as the latter part of the 12th Dynasty. While apparently none of these later writers identify the Hyksos with the Hebrews and still express great puzzlement regarding their precise origin, the evidence they have been presenting increasingly points to the Hyksos as being substantially identical with the Hebrews. Let us look at some of the evidence and see how it relates to the Biblical record

To find evidence of the archaeological fact that this was not an invasion of foreign Asiatics, we turn to the testimony of T. Save-Soderbergh and John Van Seters. T. Save-Soderbergh wrote:

The only literary source that describes how the Hyksos came into power is *The History of Egypt* written by Manetho in the second century B.C., i.e., about 1500 years after the event. Thus, it is a very late source, but derived from earlier documents. It is, however, a typical trait of all the late sources regarding the Hyksos that they are strongly tinged by propaganda against the foreigners. In fact, the later the text, the more hostile it is to the Hyksos.⁴

He wrote additionally:

Now who were these Hyksos? The Egyptian term is *hk32h3swt*, which means "rulers of foreign countries." This seems to have been a usual designation of the sheikhs in Palestine and Syria as

early as the beginning of the Twelfth Dynasty. For instance, such a sheikh who came with 37 Asiatics to bring their products to Egypt is depicted in a tomb at Beni Hasan. In the accompanying inscription he is called “the ruler of a foreign country” (*hk3h3st*) *Abishi* — . . . This term gives us the impression that the Hyksos were only a little group of foreign dynasts rather than a numerous people with a special civilization. According to Manetho’s version it also seems as if the Hyksos rule only meant a change of political leaders in Egypt; and not a mass invasion of a numerically important foreign ethnic element. This view is corroborated by contemporary evidence. There are a great many tombs from the Hyksos period in Egypt, but there is no clear indication of an invasion of a foreign people from the north.⁵

We thus learn that the archaeological information concerning the Hyksos is from the record penned by Manetho some 1500 years after the time they were in Egypt. This should caution us to use great care in accepting Manetho’s conclusions. T. Save-Soderbergh’s conclusion is that there was no invasion by people called the Hyksos but rather there simply occurred a change in the political rulers. He continues:

To sum up, the analysis of the archaeological evidence gives a somewhat negative result, but rather supports the view, mentioned above, that the Hyksos rule was only a change of political leaders, and not an invasion by a numerically important ethnic element with a superior technique and a special civilization. On the other hand, the Hyksos had close connections with Asia, and seem to have favoured the introduction of innovations from this area more than their Egyptian predecessors. But it is only towards the end of their rule in Egypt that they introduce a number of improvements in military technique in an attempt to uphold their political power against the growing Egyptian opposition. Then, first the horse drawn chariots, new types of daggers and swords, bronze weapons, the strong compound Asiatic bow, etc., are imported from the dates of the actual finds of these innovations in Egypt, since they are unknown until the very end of the Hyksos rule.⁶

Although no evidence of chariots as early as the 12th Dynasty (about 2000 B.C. to 1788 B.C.), have as yet been found by archaeologists, the Bible says very clearly in Genesis 50:9, “And there went up with him both chariots and horsemen: and it was a very great

company.” Thus, we should expect such evidence to be forthcoming from archaeologists. As late as 1960 archaeologists found evidence of horses that relate to the 12th Dynasty.⁷

Van Seters who calls the Hyksos peoples Amurrites (people of Syria, Palestine), wrote:

The long period of acculturation of coastal Syria and Palestine to Egyptian arts and crafts fully prepared the “foreign rulers” and their supporters for taking control of Egypt. This was achieved, not by a sudden *coup d’etat* from without, but in cooperation with a fifth column Amurrite group already established in the Delta. The strong Amurrite princes of Syria-Palestine became heir to the Egyptian throne in a time of the latter’s dynastic weakness.⁸

He continued:

There was active cooperation between the Asiatics and the Egyptians within Egypt itself in the Amurrite *coup d’etat*. Disloyalty by important noble families may be understood in light of the strong centralization of administration by the Pharaohs of the late Twelfth Dynasty. In the period of dynastic weakness, these families reasserted themselves. With the breakup of the land into the three departments of the previous Middle Kingdom administration, an Egyptian, Nehesy, had control of the North, probably with Asiatic cooperation. It was merely a step for Amurrite princes themselves to take control of Lower Egypt and, in time, the whole of Egypt. No great military conquest was needed to accomplish this, and it is doubtful that any occurred. All that was required for the land to become an Amurrite dynasty was the recognition, by a sufficient number of the Egyptian nobility, of a strong foreign king in the strategic city of Avaris and submission to him as vassals (to their own economic advantage).⁹

The information above indicates that there was in all probability no invasion of Egypt by Asiatic foreigners but rather some kind of internal change in rulers. This accords quite well with the premise that the Hyksos were the Israelites. If we go back for a moment to our earlier contact between the pharaoh of the Bible of Joseph’s day and the pharaoh discovered by the archaeological evidence, we can see what could have happened.

We saw that in the middle of the 12th Dynasty, the year 1888 B.C. to be exact, Sesostri III began to reign. In 1886 B.C., he made

Joseph prime minister, and the central government took on increased strength, especially as a result of the seven years of famine when so much of the land came under the ownership of the central government. It was for these reasons that, in all probability, the hereditary monarchs ceased to have rule over the provinces as they had before. These conditions prevailed when, in 1877 B.C., Jacob and his family came to Egypt and began to grow into a nation.

During the life of Joseph, who died in 1806 B.C., the two greatest pharaohs of the 12th Dynasty reigned (Sesostris III and Amenemhet III) and the kingdom prospered. With the death of Amenemhet III in 1802 B.C., the reigns of two more rulers brought the 12th Dynasty to a close. These latter two reigned a few years (Amenemhet IV, nine years and Sebeknefrure, four years). The next period of some 208 years was the period of the 13th to the 17th Dynasties during a part of which the rulers were Semitic or Asiatic.

Following the end of the 12th Dynasty, a new house took control, seemingly in a very tranquil fashion.¹⁰ However, the reigns of succeeding pharaohs were short and the empire began to dissolve. Breasted wrote:

Rapid dissolution followed, as the provincial lords rose against each other and strove for the throne. Pretender after pretender struggled for supremacy.¹¹

In this kind of atmosphere, the kings with Semitic names began to reign. These were the so-called "Hyksos." We must remember that the Israelites under Joseph had become an important part of Egyptian government. If Joseph continued in office until his death (a period of 80 years), he probably was the most outstanding government employee in the land. Because of his wisdom he was probably highly respected. He also would have had much opportunity for training and introducing many of his fellow Israelites into government service. Consequently, following Joseph's death and the end of the 12th Dynasty several years later, jockeying for political power by the Egyptians, with no strong ruler asserting himself from their number, would have given the Israelites with any governmental ambition at all, the opportunity to gain the rulership. Their aspirations and achievements would amply fulfill the speculative suggestions of T. Save-Soderbergh, Van Seters, and others that this was an internal *coup d'état*. Because of Joseph's superb relationship with the Egyptians, as well as his dynamic leadership as prime minister for

years, many of the later Egyptians would probably have been equally happy to side with the aspiring Hebrews during these troubled times.

The Land of Goshen and the Hyksos

The Bible states that the Israelites were given the land of Goshen to live in by Sesostri III (Genesis 46:34). Does this help identify them in any way with the Hyksos? It does indeed, for Goshen was in the north part of Egypt. The city of Avaris which was later called either Tanis or Qantir was the capital of the Hyksos and was located in the land of Goshen. It probably was made a seat of government during Joseph's term as prime minister. Van Seters' conclusion is very pertinent to this question:

Taking the archaeological evidence together with this, it seems safe to assert that Senwosret III created an important center of government in the North, a balance and perhaps even a rival to Thebes.¹²

Thus, the identification of the land of Goshen with the capital of the Hyksos both as to location and as to time gives added proof that the Hyksos were indeed the Israelites.

One additional fact might be offered concerning Avaris. It is also commonly identified with the Biblical Zoan. Thus, we can find a reason for the Biblical statement of Numbers 13:22:

And they ascended by the south, and came unto Hebron; where Ahiman, Sheshai, and Talmai, the children of Anak, were. (Now Hebron was built seven years before Zoan in Egypt.)

The statement that Hebron was built seven years before Zoan provides circumstantial evidence regarding the premise that the Hyksos were the Israelites. Hebron is the city where Abram purchased land to bury Sarah (Genesis 23:19). Since it is the only land purchased by Abraham, Hebron becomes a type or figure of a down payment or first fruits of the promise that God's people would inherit that land. Zoan, therefore, regardless of its importance in the minds of the Israelites as a place that gave evidence of the Hebrews' triumph in Egypt, was inferior to God's city Hebron (although Hebron was not occupied by Israelites at that time). So, as we consider that in everything God has preeminence, we realize why the Bible ties the founding of Zoan to Hebron. God would not let Israel, who founded Zoan, or Avaris, forget that He had already decided on their inheritance.

Another interesting sidelight which possibly links the Hyksos to the Israelites is afforded by noting the gods the Hyksos served. Archaeological evidence clearly indicates that their dominate god was Seth or Seth-Baal who was of Canaanish origin. This particular god had become so highly integrated into the Egyptian religious idea that Rameses II, who reigned more than 150 years after the Exodus, identified himself with the god Seth. The god Seth is shown on a stela of Rameses II to be a god represented in foreign attire, wearing a high conical cap with gazelle horns protruding from the front.¹³ However, Seth is also represented as a bull. He is called the “bull of Retjenu” (Syria).¹⁴ In the Egyptian pantheon, Seth is augmented by two Asiatic goddesses as consorts, Anat and Astarte.¹⁵ Anat seems to be represented on scarabs of the Hyksos period as a nude deity with cow ears, horns, and Hathor curls.¹⁶ However, even as Seth is also represented as a bull, so Anat, the female god, is represented as the “milch cow of Seth.”¹⁷ Thus, the Egyptians actually worshipped a god named Seth which was represented by a bull. They also worshipped a god related to Seth which was represented by a cow.

When Moses was on Mount Sinai, the Israelites sinfully asked Aaron to make a calf. When the golden calf was made, the Israelites said very strangely, as we read in Exodus 32:4:

And he received them at their hand, and fashioned it with a graving tool, after he had made it a molten calf: and they said, These be thy gods, O Israel, which brought thee up out of the land of Egypt.

Why would he use the plural “gods” when there was only one calf to worship? The difficulty ceases if we see in this calf Seth, the bull of Retjenu as well as Anat, the milch cow of Seth. These were the gods the Israelites served in Egypt. One calf could equally represent both gods.¹⁸

Joseph Identifies the Hyksos with the Hebrews

While archaeologists have indicated generally their belief that the Hyksos could not have been the Israelites, the reputable archaeologist, Breasted, at least suggests that some kind of relationship existed between the Hyksos and the Israelites. He wrote:

That it was a Semitic empire we cannot doubt, in view of the Manethonian tradition and the subsequent conditions in Syria-Palestine. Moreover, the scarabs of a Pharaoh who evidently

belonged to the Hyksos time, give his name as Jacob-her or perhaps, Jacob-El, and it is not impossible that some chief of the Jacob-tribes of Israel for a time gained the leadership in this obscure age. Such an incident would account surprisingly well for the entrance of these tribes into Egypt, which on any hypothesis must have taken place at about this age; and in that case the Hebrews in Egypt will have been but a part of the Beduin allies of the Kadesh or Hyksos empire. . . . Likewise, the naive assumption of Josephus, who identifies the Hyksos with the Hebrews, may thus contain a kernel of truth, however accidental.¹⁹

Breasted, therefore, concludes that the Hyksos were Semitic in origin and that the Israelites could somehow have been involved in the Hyksos movement. He suggests that the presence of the Hyksos provided a satisfactory environment for the entrance of Jacob and his family. Other archaeologists have echoed these ideas, but hardly anyone has seriously suggested that the Hyksos are one and the same as the Israelites, that is, no one except Josephus, as we have seen from Breasted's writings.

The End of the Hyksos

What does the secular record indicate regarding the end of the Hyksos in Egypt? The secular record indicates that as the years passed, the Hyksos were more and more coming into disrepute with the Egyptians. Finally, about 1600 B.C., their removal from political leadership began to take place. Avaris, the capital in the north, fell after a siege of some years and the power of the Hyksos was broken. This was near 1580-1560 B.C. during Ahmose I's reign. He was the first king of the 18th Dynasty, the Dynasty during which, in later years, the Israelites departed from Egypt.

The conclusions of Van Seters regarding the end of the Hyksos must be identified with the Israelites. He wrote:

The defeat of the foreign dynasty was the result of a civil war, and the foreign population which was probably not very numerous simply continued to live in the Eastern Delta.²⁰

Can this secular solution offered by Van Seters and others regarding the expulsion of the Hyksos from Egypt be correlated with the Israelites? It probably can be.

The first king of the 18th Dynasty was Ahmose I. He began to reign about 1580 B.C. One of his first efforts was to remove the

Asiatics or Hyksos from political office. Because some of them had become rulers of the kingdom, this amounted almost to civil war. Since we are suggesting that the Hyksos were the Israelites, let us reconstruct this bit of history with this thought in view. Following Joseph's death, the Israelites became increasingly prominent in politics; some became rulers in the land. In 1580 B.C., Ahmose I began to change the situation. Under his energetic leadership, the warlike elements of the Israelites were driven from the land. He probably stripped the Israelites of all political authority and may have begun to enslave them. Ahmose I was followed by his son Amenhotep I who reigned at least ten years and consolidated the gains of his father.

No evidence is presently available as to whether Amenhotep's successor, Thutmose I, was his son, but in 1540 or 1535 B.C., Thutmose I began to reign. One of his major tasks was to bring into subjection the land of Nubia and after that the land of Syria in which the fires of potential rebellion were burning. Biographies of two of his soldiers indicate his conquest was carried into northern Palestine and possibly beyond to the Euphrates River. The battle that followed resulted in a "great slaughter of Asiatics followed by the capture of a large number of prisoners."²¹ This battle did not solve the problem of potential revolt by Syria (Palestine) for it was not until after twenty years of warfare, under Thutmose III, that Syria was finally completely crushed and placed securely under Egyptian domination.²²

This probably sets the background for the Biblical statement of Exodus 1. Joseph had died in 1806 B.C., about 270 years earlier. The Israelites who followed gradually had come into disrepute because of the desire of some of them to rule the country. Possibly as a result of Ahmose I's victory over these Israelite leaders, the people of Israel were already in a condition of servitude. Thutmose I undoubtedly realized that the Israelites, who were ever increasing in number, had to be forcibly removed from power. Moreover, they were originally of the land of Palestine which was a part of Syria and which was now giving him so much difficulty. Therefore, he made his decision. Exodus 1:9-11:

And he said unto his people, Behold, the people of the children of Israel are more and mightier than we: Come on, let us deal wisely with them; lest they multiply, and it come to pass, that, when there falleth out any war, they join also unto our enemies, and fight against us, and so get them up out of the land. Therefore they did

set over them taskmasters to afflict them with their burdens. And they built for Pharaoh treasure cities, Pithom and Raamses.

It could be that Thutmose I concluded that only by making complete slaves of the Israelites would they be prohibited from being able to rise again in power or enabled to join with the Asiatics of Palestine to attempt an overthrow of Egypt. All knowledge of the benevolent leadership of Joseph had ceased to exist. The Israelites had become a threat to the kingdom, and he believed they had to be dealt with harshly. But the more they were oppressed the more they multiplied. The Bible records that finally the king decreed that all of the firstborn were to be killed. And so we are introduced to Moses and Princess Hatshepsut.

A Queen Is King

Thutmose I, the pharaoh who fathered Thutmose III, had two sons and two daughters by his queen, Ahmose. She was the royal descendant of Ahmose I who was the first king of the 18th Dynasty. Both sons and one of the daughters of Thutmose I died in youth or in childbirth. The surviving daughter, Makere-Hatshepsut, was thus the only child of the old line. Because of her direct descent from Ahmose I, she was heir to the throne, even though Thutmose I had two additional sons by other queens. One of these other sons was to become Thutmose II and the other Thutmose III.

Hatshepsut is of special interest to us because the timetable of her reign coincides with the timing of the Biblical events that involve Moses. She was the daughter of pharaoh. The Bible records that the daughter of pharaoh drew the baby Moses from the water and adopted him as her son. This would have been eighty years before the Exodus, the year 1527 B.C.

The secular record shows that Hatshepsut began to reign about the same time as Thutmose III, which we will see must have been in 1501 B.C.,²³ and that she reigned either twenty or twenty one years. Thus, she must have died about 1480 B.C. The archaeological record furthermore shows that she was a strong, forceful, and energetic ruler. Unfortunately, no information has been found that gives her life span or age when she became ruler, but her mature actions as a ruler together with the relative short duration of her reign suggests that she was not too young when she began to reign. If she was about 15 when Moses was born, she would have been in her early forties when she

became ruler, and in her early sixties when she died. In any event, only she could have been the pharaoh from whom Moses fled when he killed the Egyptian, as we shall see presently. This kind of action, the attempt to kill Moses, is in agreement with the actions of a ruler who as a young princess made the mistake of sparing one of the hated Hebrews who now threatened the kingdom.

Princess Hatshepsut, in all probability, named the Hebrew baby Moses because her own family name on one side was Ahmose and her father's name was Thutmose. Mose in these names actually means son. Ahmose was thus "son of Ah." Thutmose was "son of Thoth." "Moses" coincides quite closely with the Hebrew word *mashah*, which means "to draw out," but it does not necessarily follow, as many would suggest, that this is the reason he was called Moses.²⁴ Moreover, it would be strange indeed if an Egyptian princess gave her adopted son a name that identified him for life with the hated Hebrews. In Exodus 2:10, "And she called his name Moses: and she said, Because I drew him out of the water," the emphasis more probably should be on "I" rather than on the "drew him out of the water." She had found the baby. He was to be her son. Therefore, "Moses" fit perfectly.

This suggests a very interesting thought. Jesus identified Himself with Israel by the phrase "Out of Egypt have I called my son" (Hosea 11:1, Matthew 2:15). Moses is one of the greatest types of Christ; he, too, was called out of Egypt. Does Moses' name, which means "son," further identify him with Christ because Christ, too, was a "son" [Moses] called out of Egypt?

The next incident in the Biblical passage that relates Hatshepsut to Moses occurred 40 years later. Moses was 40 years old when he killed an Egyptian and fled from Egypt, where the pharaoh sought to kill him (Exodus 2:15). Who was this pharaoh? As we have indicated, it could not have been Thutmose III who began to reign in 1501 B.C. and whom we believe died in the Red Sea. The Bible declares that the pharaoh who sought to kill him died while Moses was in Midian (Exodus 2:23, Exodus 4:19).

The solution to our problem is simply that a co-regency existed at the time Moses fled from Egypt. Two kings were on the throne. One was Thutmose III, who had begun to reign 14 years earlier in 1501 B.C., and as we have seen, the other was Hatshepsut. Because of Hatshepsut's royal blood lines, Thutmose III was forced to acknowledge her as co-regent. She, in fact, became the dominant ruler because of her superior royal blood lines, and she was given the title

of “king” even though she was a woman.²⁵ A typical inscription concerning her reign is that of a base inscription found on the Karnak Obelisks from Hatshepsut’s reign. There we read:

Live the female Horus . . . daughter of Amon-Re, his favorite, his only one, who exists by him, the splendid part of the All-Lord, whose beauty the spirits of Heliopolis fashioned; who hath taken the land like Irsu, whom he hath created to wear his diadem, who exists like Khepri (Hpry), who shines with crowns like “Him-of-the-Horizon,” the pure egg, the excellent seed, whom the two sorceresses reared, whom Amon himself caused to appear upon his throne in Hermonthis, whom he chose to protect Egypt, to “defend” the people, the female Horus, avengeress of her father, the oldest (daughter) of the “Bull-of-his-Mother,” whom Re begat to make for himself excellent seed upon earth for the well-being of the people; his living portrait, King of Upper and Lower Egypt, Makere (Hatshepsut), the electrum of kings.²⁶

Even though he was not a true son of King Hatshepsut, Moses’ position in the palace must have been of the highest stature. When Moses killed the Egyptian, Queen (or King) Hatshepsut no doubt realized the enormous risk she had taken in saving the Hebrew baby from death and raising him as her son. He had manifested superior wisdom and leadership qualities in the Egyptian court (Acts 7:22), but at the age of 40, he showed clearly that his sympathies were with the slaves, the Israelites, his own people. All the fears, which had been expressed by her father concerning a potential uprising by the Israelites, returned to her. What had she done?

The only solution was to have her adopted son killed. King Hatshepsut, then, was no doubt the king who sought to kill Moses. No wonder he fled to the wilderness of Midian to tend sheep. No wonder he hesitated to return even forty years later.

King Hatshepsut was preoccupied with the Israelites, which is clearly indicated in one of her inscriptions: “I raised up that which had gone to pieces formerly, since the Asiatics were in the midst of Avaris of the Northland.” “Asiatics” is a reference to the Israelites. Avaris is the same area of Egypt as the land of Goshen.

According to the archaeological record, Hatshepsut died in about the year 1481.²⁷ which would have been about six years after Moses fled. The Bible records this fact in Exodus 2:23. Thutmose III continued to reign as sole ruler almost until Moses returned to lead

the Israelites from Egypt. Thus, only Hatshepsut could be the pharaoh who sought to kill Moses and who died while he was in Midian.

Summary

We have seen some of the events that occurred within Egypt as Israel grew into a nation of possibly two million souls. We cannot positively identify them with the Hyksos. However, to find no record of this great nation which grew up in Egypt would seem very strange indeed. When we recall that they began with one of the greatest prime ministers Egypt ever had, Joseph, it would seem even more strange if no record of these people was available. On the other hand, what are we to think of all the archaeological findings about these mysterious Asiatics or “Hyksos” whose arrival and removal is so clouded, and who were present in Egypt when the Israelites were in Egypt? Also, it seems very suspicious that the Hyksos capital was in Avaris or Zoan in the land of Goshen where the Israelites lived. It certainly appears that the two peoples must be one and the same.

It could be argued that the Exodus is unrecorded in the ancient secular records. If that is true, why should we expect the Israelites residence in Egypt to be noted in any of the archaeological records? There is a major difference between them, of course, for secular records can be consciously altered to suit the purposes of whoever writes them. The Exodus was a shattering, dreadful defeat for Egypt with not even one ray of victory. There would not be any reason or compulsion to keep records of such an overwhelming, shameful defeat by a nation of slaves. There is, however, indirect archaeological testimony of the Exodus as we shall see in greater detail in the next chapter.

We have introduced a number of pharaohs and dynasties into our discussion. Let us summarize by historical timetable the information thus far presented.

1888 B.C. Sesostris III became pharaoh. He was part of the middle kingdom or 12th Dynasty of Egypt. His father, Sesostris II, probably reigned during the previous 19 years and possibly came to an untimely death.

1886 B.C. Joseph became prime minister or grand vizier of Egypt under Sesostris III.

1877 B.C. The family of Joseph came to Egypt and took up residence in the land of Goshen. The city of Avaris (Zoan in the Bible), which was later called Tanis or Qantir was the capital.

1850 B.C. Sesostris III died after an exceedingly successful reign of 38 years. He was succeeded by another great 12th Dynasty pharaoh named Amenemhet III. Under his reign Joseph continued as prime minister. A canal bearing Joseph's name was constructed at this time.

1806 B.C. Joseph died.

1802 B.C. Amenemhet III died after a 48-year reign. During his reign, Egypt was prosperous, tranquil, and productive. He was succeeded by Amenemhet IV who reigned for the brief period of nine years. During his reign, there was much internal strife for royal supremacy.

1791 B.C. Amenemhet IV died and was succeeded by the last pharaoh of the 12th Dynasty, Sebeknefrure.

1787 B.C. Sebeknefrure's brief reign of four years ended and with it ended the 12th Dynasty. The 13th Dynasty began. The reigns of succeeding pharaohs were short and the empire began to dissolve. The Israelites, who no doubt were the Hyksos of archaeological fame, took advantage of the internal struggles to acquire a strong hand in the Egyptian government and in indeed some of them might have reigned as pharaoh during this period.

1580 B.C. (Approx.) Several dynasties ruled over Egypt since 1787 B.C. At this time, Ahmose I began to reign as the first king of the 18th Dynasty. He forcibly began to remove the Israelites (Hyksos) from political power. The most war-like Israelites were driven from the land and the Israelite nation began to be severely oppressed. Either this pharaoh or a closely succeeding pharaoh, such as Thutmose I could have been the king who "did not know Joseph" (Exodus 1:8).

1560 B.C. (Approx.) Ahmose I was followed by his son Amenhotep I. Amenhotep I consolidated the gains of his father.

1540 B.C. (Approx.) Thutmose I began to reign as king.

1535 B.C. He, too, was a continuation of the 18th Dynasty. He continued and probably intensified the oppressive measures against the Israelites, for he was ruling when Moses was born. His

animosity toward the Israelites was probably heightened by his troubles with Palestine and Syria. His reign was followed by that of his son Thutmose II.

1527 B.C. Moses was born at a time when a royal edict condemned all Hebrew boy babies to be destroyed. Princess Hatshepsut, a daughter of the king found him in the bulrushes and raised him as her son.

1501 B.C. Thutmose III began to reign as the greatest king of the 18th Dynasty. For approximately the first 25 years of his reign he was co-regent with Princess Hatshepsut. She regarded herself as a king and was the dominant ruler during this co-regency.

1487 B.C. Moses fled from Egypt. King Hatshepsut who had raised him to be her son, sought to kill him because of his evident loyalty for the Israelites.

1481 B.C. (Approx.) King Hatshepsut died and Thutmose III continued to reign until the time of the Exodus.

NOTES:

¹ See Chapter 7 for the correct date of Joseph's arrival into Egypt.

² Raymond Weill, "The Problem of the Site of Avaris" in *Journal of Egyptian Archaeology*, Vol. 21, 1935, p. 25.

³ *Ibid.*, p. 23.

⁴ T. Save-Soderbergh, "The Hyksos Rule in Egypt," in *Journal of Egyptian Archaeology*, Vol. 37, 1951, p. 55.

⁵ T. Save-Soderbergh, *Hyksos Rule*, p. 55.

⁶ T. Save-Soderbergh, "The Hyksos Rule in Egypt," in *Journal of Egyptian Archaeology* (1951), p. 60.

⁷ John A. Van Seters, *The Hyksos*, Yale Press, 1966, p. 185.

⁸ *Ibid.*, p. 190.

⁹ *Ibid.*, p. 192.

¹⁰ James H. Breasted, *A History of Egypt*, Charles Scribner & Sons, 2nd Ed., 1937, p. 211.

¹¹ *Ibid.*, p. 211.

¹² Van Seters, *The Hyksos*, p. 94.

¹³ *Ibid.*, p. 174.

¹⁴ *Ibid.*, p. 175.

¹⁵ *Ibid.*, p. 175.

¹⁶ *Ibid.*, p. 178.

¹⁷ *Ibid.*, p. 175.

¹⁸ The Egyptians had two other gods represented by cattle but they have not been identified with the Hyksos. They are Apis the bull of Egypt and Hathor the cow goddess. See p. 12, Georges Posener, *A Dictionary of Egyptian Civilization*, Methvan and Co., Ltd., 1962.

¹⁹ James H. Breasted, *A History of Egypt*, Charles Scribner & Sons, 1909, p. 220.

²⁰ *A Dictionary of Egyptian Civilization*, p. 194.

²¹ Breasted, *A History of Egypt*, p. 263.

²² *Ibid.*, p. 259.

²³ A text at Karnak describes Hatshepsut's assumption of the kingship in year 2 of Thutmose III. William C. Hayes, "Chronology," *The Cambridge Ancient History*, Cambridge University Press (1964), p. 18.

²⁴ Merrill F. Unger, *Archaeology and the Old Testament*, Zondervan, 1965, p. 136.

²⁵ James H. Breasted, *A History of Egypt*, Charles Scribner & Sons, 1909.

²⁶ James H. Breasted, *Ancient Records of Egypt*, Vol. 11, University of Chicago Press, 1906, p. 130.

²⁷ See Breasted, *Ancient Records of History*, p. 42; and Petrie, *History of Egypt*, p. 251.

Chapter 9

The Exodus

We have arrived in our discussion to the time of the Exodus of the Israelites from Egypt. This great event occurred in the year 1447 B.C., according to the Biblical chronology reported earlier in this study. We saw precise agreement between the secular record of the great Sesostrius III of Egypt's 12th Dynasty and the Biblical statement concerning Joseph who became prime minister during his reign. We also saw much circumstantial evidence that related the Hyksos to the Israelites. While no precise chronological evidence such as astronomical data is available, the Biblical and secular records mesh so closely that we feel justified in identifying the Hyksos and the Israelites as one and the same people, as did the historian Josephus. Moreover, we believe we have identified the pharaoh who sought to kill Moses and who died while Moses was in Midian.

Can we find concordant information that ties the secular to the sacred record in connection with the Exodus? In this chapter, we will answer that question, and in so doing we will find that there is indeed exceedingly close meshing of the two records. In fact, we will discover another astronomical "fix" as we did with Sesostrius III.

Let us begin our search by attempting to identify the pharaoh who would not permit Moses to lead the Israelites from Egypt. Two men are frequently set forth as possible candidates for the pharaoh who refused to let the Israelites go. Conservative scholars often suggest that Amenhotep II, the pharaoh who followed the great Thutmose III, was the pharaoh to whom Moses actually appeared. Under this arrangement, Thutmose III was the pharaoh who oppressed the Israelites but who must have died before Moses returned to Egypt. The problem with this solution is that the secular sources show that Amenhotep II died about 1422 B.C. Thus, this date does not come within two decades of the Exodus.

On the other hand, a great many archaeologists have sought to prove that the Exodus occurred about 150 or more years later, during

the reign of Rameses II. Their major argument is that the Israelites could not have arrived until the Hyksos were ruling in Egypt (about 1720-1580 B.C.), and thus the days of Thutmose III and Amenhotep II were far too early. Furthermore, the Bible declares in Exodus 1:11 that the Israelites built the store cities of Pithom and Rameses. Since no archaeological information has been discovered that mentions a city named Rameses prior to the 19th Dynasty when the Rameses were kings, these chronologists argue that the Israelites still must have been in Egypt during the reign of Rameses II in the 13th century B.C.

It appears that this latter solution must also be discarded. There is no specific evidence in the available secular data on Rameses II that particularly identifies him with the Israelites. His death date does not coincide in any way with Biblical date for the Exodus. The fact that there is no archaeological evidence of a city called Rameses existing before his Dynasty (the 19th) should not be surprising. The archaeological record provides fragmentary evidence at best. For example, until a few years ago there was no archaeological evidence of horses in Egypt before the middle of the so-called Hyksos period (13th to 17th Dynasties), even though the Bible says very clearly that Joseph exchanged horses for food (Genesis 47:17) before the Israelites were in Egypt. Now, however, there is evidence of horses in Egypt in the Middle Kingdom (12th Dynasty), as revealed by the skeleton of a horse found at Buhen in a Middle Kingdom context.¹

Actually, the Bible called the area where the Israelites dwelt “the land of Rameses” in Joseph’s day (Genesis 47:11). Furthermore, names with “Ra” were exceedingly common centuries before Rameses II.² The god Re from whom Rameses II takes his name was a god of the Egyptians way back in the 5th Dynasty.³ We must conclude, therefore, based upon the Biblical and secular evidence, that Rameses was a name given to a province or town of Egypt hundreds of years before Rameses II lived, and that the Israelites built or rebuilt a city by this name years before the Exodus, with no particular relationship to Rameses II or the 19th Dynasty.

If neither Rameses II nor Amenhotep II was the pharaoh of the Exodus, who was? Can we find agreement between the Bible and archaeology? The facts offered by the sacred and secular must agree. Let us see how wonderfully these two records can be meshed.

The pharaoh who we will show to be the pharaoh of the Exodus was the great Thutmose III who reigned during the flower of the 18th Dynasty. We shall see that his life as well as his death coincide with the

Biblical record of Exodus. Let us examine the available evidence concerning the timetable of his reign.

The studies of R. A. Parker are extremely helpful.⁴ He has shown that the accession year of Thutmose III must be one of five dates. This is based on the discovery of the record of a helical rising of the star Sirius during his reign as well as two lunar dates, which require these narrow limits for his accession year. The possible dates are 1515 B.C., 1504 B.C., 1501 B.C., 1490 B.C., and 1479 B.C. While all of these dates are acceptable according to astronomical evidence, most archaeologists favor the period from 1504 B.C. to 1490 B.C. because of other secular evidence. For example, William C. Hayes⁵ favors 1504 B.C. although he believes 1490 B.C. is also a possibility.

Sir Leonard Wooley⁶ also favors 1504 B.C. but concludes that with the present evidence it is impossible to determine with absolute certainty the chronology of the New Empire.

Thus far, we know that our candidate for the pharaoh of the Exodus probably began to reign in one of three years: 1504 B.C., 1501 B.C., or 1490 B.C. Since the Biblical record is concerned with his death, we must know the length of his reign in order to tie his accession year to his death year. This is available from the archaeological record. On the wall of the tomb of one of his officers, Amenemheb by name, the notice is given that Thutmose III died in the 54th year of his reign.⁷ We will look more closely at this text a bit later.

With the time span of his reign known, we know that if he began to reign in 1504 B.C., he must have died 1450 B.C. If his reign commenced 1501 B.C., his death would have occurred 1447 B.C., and if his reign began 1490 B.C., the year 1436 B.C. must have been his death year.

Returning to the Biblical record we have already seen that 1447 B.C. or possibly 1446 B.C. was the date of the Exodus. Of course, 1447 B.C. is also one of the three possible dates of the death of Thutmose III in accordance with the secular record. Thus, he is indeed a leading contender for the dubious honor of being the pharaoh of the Exodus.

Immediately a problem arises, however. If he was the king who died in the Red Sea, who is the king who sought to kill Moses forty years earlier and who, according to the Biblical notice, died while Moses was tending sheep in Midian? How could Thutmose III be the man we are looking for, if he reigned 54 years? He would have been king when Moses fled from Egypt, but how could he have died while

Moses was in Midian and yet be alive when the Israelites left Egypt? We have already seen that this was King Hatshepsut who reigned as co-regent with Thutmose III and who died about 1480 B.C. or about six years after Moses fled from Egypt.

The Napoleon of Egypt

Thus far we have found synchronization between the secular and sacred records concerning the princess who drew Moses from the water, the king who sought to kill Moses and died while Moses was in Midian, and the death date of Pharaoh Thutmose III,⁸ which coincides with the Biblical date of the Exodus. Does Thutmose III qualify as the king to whom God, through Moses, said in Exodus 9:16:

And in very deed for this cause have I raised thee up, for to shew in thee my power; and that my name may be declared throughout all the earth.

Abundant archaeological materials are available concerning this question. They show that he was a great military man. He extended the boundaries of Egypt to the greatest extent Egypt had ever known. He personally conducted seventeen different military campaigns. Historians often call him the “Napoleon of Egypt.” The *Encyclopaedia Britannica* offers the following summary:

The immense energy of Tothmosis III now found its outlet in war. Syria had revolted, perhaps in the years of inactivity following Tothmosis I's death; now the young king was ready to lead his army against the rebels. Unlike his predecessors, who merely overran one after another a series of isolated city-states, Tothmosis had to face the organized resistance of a large combination, embracing the whole of western Syria and headed by the city of Kadesh on the Orontes. Six carefully planned campaigns had to be fought in order to reach and capture that city. In the 33rd year of his reign he marched through Kadesh, fought his way to Carchemish, defeated the forces that opposed him there and crossed the Euphrates into the territory of the Hurrian king of Mittanni. His annals record 17 separate campaigns in Palestine and Syria and list the immense booty and tribute obtained from that rich country. Egypt was master of an empire reaching to the Amanus mountains, and the neighboring great powers hastened to send diplomatic presents. In the intervals of war Tothmosis III proved himself a wonderfully efficient

administrator, with his eye on every corner of his dominions. The Syrian expeditions occupied six months on most of his best years, but the remaining time was spent in activity at home, repressing robbery and injustice, rebuilding and adorning temples with the labour of his captives and the plunder and tribute of conquered cities, or designing with his own hand the gorgeous sacred vessels of the sanctuary of Amon. In his later years some expeditions took place into Nubia. The children of the subdued princelings in Asia and elsewhere were taken as hostages to Egypt and there educated to succeed their fathers with a due understanding of the might of the pharaoh both to protect and to punish. Thus was an empire established on a sound basis, probably for the first time in history. Tothmosis died in the 54th year of his reign. His mummy, found in the cachette at Dair al-Bahri, is remarkable for the low forehead; yet we consider him the greatest of all pharaohs.⁹

His activity as a military man provides another touchstone between the secular and sacred records. When he pursued the people of Israel, we read in Exodus 14:6-7:

And he made ready his chariot, and took his people with him: And he took six hundred chosen chariots, and all the chariots of Egypt, and captains over every one of them.

This is in complete accord with the personality of this pharaoh. On a tablet that describes a battle at Megiddo, in which Thutmose III captured 924 chariots, we read:

His Majesty set forth in a chariot of fine gold, being adorned with his panoply of war like Horns the Strong-armed, Lord of Action, and like Mont of Thebes, his father Amun strengthening his hands.¹⁰

He had conducted 17 successful and glorious campaigns. The 18th, his last, was to end in terrible defeat.

He was a great builder; pictures have been found that show him in a position of mastery over slaves. In regards to his building activity, Petrie writes:

We see thus the extraordinary activity in building; and probably dozens of minor temples have passed away which are quite unknown to us, as little suspected as the temples of Kom el Hisu, Gurob, and Nubt were a few years ago. As it is, we can count up over thirty different sites, all of which were built on during this reign.¹¹

Certainly this could be the pharaoh whom God allowed to become great for some purpose. There was no other kingdom whose destruction would so clearly reveal God's power and His mighty name. In many ways he identifies with the Biblical account of the pharaoh who died in the Red Sea.

Thutmose III Dies

Continuing our examination of Thutmose III, let us look at how vividly the Bible describes his death in the Red Sea.

When the king of Egypt was told that the people had fled, the mind of pharaoh and his servants was changed toward the people. We read in Exodus 14:5-8:

And it was told the king of Egypt that the people fled: and the heart of Pharaoh and of his servants was turned against the people, and they said, Why have we done this, that we have let Israel go from serving us? And he made ready his chariot, and took his people with him: And he took six hundred chosen chariots, and all the chariots of Egypt, and captains over every one of them. And the LORD hardened the heart of Pharaoh king of Egypt, and he pursued after the children of Israel: and the children of Israel went out with an high hand.

Exodus 14:10:

And when Pharaoh drew nigh, the children of Israel lifted up their eyes, and, behold, the Egyptians marched after them; and they were sore afraid: and the children of Israel cried out unto the LORD.

Exodus 14:18:

And the Egyptians shall know that I am the LORD, when I have gotten me honour upon Pharaoh, upon his chariots, and upon his horsemen.

Exodus 14:28:

And the waters returned, and covered the chariots, and the horsemen, and all the host of Pharaoh that came into the sea after them; there remained not so much as one of them.

Psalms 136:15:

But overthrew Pharaoh and his host in the Red sea: for his mercy endureth for ever.

An Unfinished Tomb

The language of the Bible that relates to the cause and manner of the death of this pharaoh is very plain. Since the pharaoh of the Exodus experienced such a catastrophic death, one wonders if there is any archaeological evidence of his sudden end. There is. We can see this circumstantially by examining his tomb. In spite of the fact that each pharaoh considered the construction of his own tomb of paramount importance, planning and constructing it in the greatest detail, the tomb of Thotmosis III was never finished. This fact is especially interesting and significant since this great pharaoh did more building and reigned longer than any other pharaoh. We quote Weigall:

This tomb is excavated in a 'chimney' of rock at the southeast corner of the valley. From the custodian's house one walks southwards, turning to the left at the junction of the paths, and thus leaving the tombs of Septah (47), Bay (13), and Tausert (14) on one's right. The path terminates in a flight of steps leading up to the 'chimney.' Ascending these, and crossing a platform of rock, one finds in the far corner the mouth of the tomb, which is approached by a steep flight of steps. The situation is most impressive, and repays a visit; but the descent of the tomb is somewhat difficult. The coffin and mummy of the great Pharaoh, Ra-men-kheper Thothmes III (B.C. 1501-1447) were found at Der el Bahri, where they had been hidden by the priests . . . The tomb has been left partly unfinished, as though the king, occupied by the administration of the great empire he had built up, had not bothered to give much attention to his last resting place.¹²

An unfinished tomb is totally out of character with the pharaohs, unless of course, a pharaoh happened to die unexpectedly! When the pharaoh of the Exodus led his great army in pursuit of the Israelites, he obviously had no idea that within the next few days the sea would close over his head! Thus, his unfinished tomb supports the truth of an unexpected demise for this pharaoh. Please note the accuracy of Weigall's date for Thutmose III.

The archaeological record indicates the finding of the mummy of Thutmose III. How could this be if he drowned in the Red Sea? God provided the necessary information. We read in Exodus 14:30:

Thus the LORD saved Israel that day out of the hand of the Egyptians; and Israel saw the Egyptians dead upon the sea shore.

The Egyptians obviously hastened to find the body of their dead king to give it proper burial.

The Month and Day of Pharaoh's Death

Could there be even more evidence that links Thutmose III with the pharaoh of the Exodus? Wonderfully, the well-preserved and extensive records of the early Egyptian civilizations together with the marvelous accuracy of God's Word gives us one final confirmation.

We saw that the Exodus occurred 1447 B.C., which was also the year Thutmose III died. We shall now show that the death date of Thutmose III, as recorded in the archaeological page, coincides with the month and the time of the month of the passage of the Israelites through the Red Sea. The following passages of Scripture help us to name the month in which the Israelites escaped from Egypt. Exodus 12:1-6:

And the LORD spake unto Moses and Aaron in the land of Egypt, saying, This month shall be unto you the beginning of months: it shall be the first month of the year to you. Speak ye unto all the congregation of Israel, saying, In the tenth day of this month they shall take to them every man a lamb, according to the house of their fathers, a lamb for an house: And if the household be too little for the lamb, let him and his neighbour next unto his house take it according to the number of the souls; every man according to his eating shall make your count for the lamb. Your lamb shall be without blemish, a male of the first year: ye shall take it out from the sheep, or from the goats: And ye shall keep it up until the fourteenth day of the same month: and the whole assembly of the congregation of Israel shall kill it in the evening.

Exodus 16:1:

And they took their journey from Elim, and all the congregation of the children of Israel came unto the wilderness of Sin, which is between Elim and Sinai, on the fifteenth day of the second month after their departing out of the land of Egypt.

Exodus 23:15:

Thou shalt keep the feast of unleavened bread: (thou shalt eat unleavened bread seven days, as I commanded thee, in the time appointed of the month Abib; for in it thou camest out from Egypt: and none shall appear before me empty:).

Numbers 33:3:

And they departed from Rameses in the first month, on the fifteenth day of the first month; on the morrow after the passover the children of Israel went out with an high hand in the sight of all the Egyptians.

It is apparent from the above that Abib, the month in which the Israelites left Egypt, became the first month in the original Hebrew calendar. On the 14th day of this month at even, they celebrated the Passover, and very early on the morning of the 15th, the Exodus from Egypt began. One month later, they arrived at the wilderness of Sin. During this 30-day period, the company of men, women, and children, with their flocks and herds, had traveled to the Red Sea, passed miraculously through the Red Sea, rested briefly at Elim, and arrived at the wilderness of Sin. The journey to the Red Sea would have required at least ten days, and at least another ten days would have been required to trek to the wilderness of Sin. Obviously, then, the death of Thutmose III had to occur sometime between the 25th of the first month Abib and the 5th of the second month Ziv. Does the archaeological record relate to this date? Indeed it does.

Let us first relate the Egyptian calendar to the Israelite calendar. The following correlation¹³ between the Macedonian and Egyptian calendars is reported by Finegan.

The Macedonian Calendar in Egypt
(Corresponding names of the month in sequence)

Macedonian	Egyptian	Julian Dates in a Com. Year
1. Dios	Thoth	Aug. 29-Sept. 27
2. Appellaios	Phaophi	Sept. 28-Oct. 27
3. Audynaïos	Hathyr	Oct. 23-Nov. 26
4. Peritios	Choiak	Nov. 27-Dec. 26
5. Dystros	Tybi	Dec. 27-Jan. 25
6. Zanthikos	Mecheir	Jan. 26-Feb. 24
7. Artemisios	Phamenoth	Feb. 25-Mar. 26
8. Daisios	Pharmuthi	Mar. 27-Apr. 25
9. Panemos	Pachon	Apr. 26-May 25
10. Loos	Pauni	May 26-June 24
11. Gorpïaios	Epeiph	June 25-July 24
12. Hyperberetaïos	Mesore	July 25-Aug. 23
Epagomenal days		Aug. 24-Aug. 28

We are indebted to the same author for the following earlier correlation of the “Macedonian Calendar in Palestine.”

The Macedonian Calendar in Palestine

Macedonian Months	Jewish Months	Julian Equivalents ¹⁴
1. Artemisios	Nisan	Mar./Apr.
2. Daisios	Iyyar	Apr./May
3. Panemos	Sivan	May/June
4. Loos	Tammuz	June/July
5. Gorpaios	Ab	July/Aug.
6. Hyperberetaios	Elul	Aug./Sep.
7. Dios	Tishri	Sep./Oct.
8. Appellaios	Marheshvan	Oct./Nov.
9. Audynaiois	Kislev	Nov./Dec.
10. Peritios	Tebeth	Dec./Jan.
11. Dystros	Shebat	Jan./Feb.
12. Zanthikos	Akar	Feb./Mar.

A careful appraisal of the above calendar correlations makes it obvious that the Macedonian month *Artemisios* is equivalent to the Egyptian month *Phamenoth* and to the Jewish month *Nisan*. Hence, the first month *Nisan*, or *Abib* as it is rendered in the Hebrew, corresponds to the seventh month of the Egyptian calendar, *Phamenoth*.

We have established, from the Biblical record, the fact that the Israelites left Egypt on the 15th day of the seventh Egyptian month *Phamenoth* (the Hebrew *Abib* or *Nisan*), and that the Pharaoh must have died at the time of the crossing of the Red Sea, somewhere between the 25th of *Phamenoth* and the fifth of the eighth month *Pharmuthi* (the Hebrew *Ziv*). What can we find from the secular record that relates?

Petrie has provided the following remarkable inscription which has direct bearing on the death of Thutmose III. It appears in early Egyptian records as the work of an officer named Amenemheb who served Menkheperra Thutmose III (see p. 125 of *Petrie's History of Egypt*). It gives the significant truth that Thutmose III died on the 30th day of *Phamenoth* which is the 30th day of *Abib*.

Behold the king had ended his time of existence of many good years of victory, power, and justification from the 1st year to the 54th year. In the 30th of Phamenoth of the majesty of the king, Menkheperra deceased, he ascended to heaven and joined the sun's disc, the follower of the god met his maker.

When the light dawned and the morrow came, the disc of the sun arose and heaven became bright. The king Aa-kheperu-ra, son of the sun, Amenhotep, the giver of life, was established on the throne of his father, he rested on the ka name, he struck down all the thrust.

Thutmose III was a ruler in Egypt; Thutmose III was a great builder; Thutmose III died suddenly in 1447 B.C. on the 30th of Phamenoth, the equivalent of the Hebrew Abib; the precise time when the Israelites went through the Red Sea. Thutmose III was the Pharaoh of the Exodus! The correlation of the Egyptian history and the facts recorded by the Bible could not be more exact!

The World Hears

As we continue to compare the sacred and secular records that relate to the Exodus, we might recall that when Thutmose I was king there was an ever-present possibility of revolt by Syria and the nations of northern Palestine. This probably occasioned the increased oppression of the Israelites and the murder of their newborn sons. Then under the energetic leadership of Thutmose III, Syria and all of Palestine were brought under complete control so that his 17th campaign, which was conducted in his 42nd year, was followed by 12 years of peace. His successor, Amenhotep II, co-regent with him for the last four months of his life, was immediately faced with revolt. Breasted reports:

Syria, of course, revolted on the death of Thutmose III, and already in his second year we find his energetic son, Amenhotep II, on the march into northern Syria to quell the rebellion. Doubtless the harbor cities had also rebelled, and hence the young king is forced to proceed by land. Leaving Egypt in April, as his father had done on the first campaign thirty-three years before, he had already in early May won a battle at Shemesh-Edom in northern Palestine.¹⁵

This great disaster clearly must have been the signal for the nations of Palestine-Syria to revolt. No wonder Amenhotep II was so

busy with quelling rebellion. The news of Egypt's defeat in the Red Sea would have spread like fire to the nations who were potential enemies of Egypt. One thinks of Rahab's words to the spies in Joshua 2:10:

And she said unto the men, I know that the LORD hath given you the land, and that your terror is fallen upon us, and that all the inhabitants of the land faint because of you.

We know that the dissemination of this news was God's intention. We read that God said to the pharaoh in Exodus 9:16:

And in very deed for this cause have I raised thee up, for to shew in thee my power; and that my name may be declared throughout all the earth.

The Tenth Plague

One other Biblical comment will be examined and then we will be finished with the question of the pharaoh of the Exodus. The Bible declares that as a result of the tenth plague, the first born of all the Egyptians died, including the first born of pharaoh. Is there any evidence of this in the archaeological findings? There surely appears to be. At the time of the Exodus two pharaohs were on the throne. The great Thutmose III was reigning in his 54th year. His son Amenhotep II, who apparently had just reigned four months as co-regent with his father, also reigned. The archaeologist Gardiner makes reference to this:

A difficulty arises, however, from the fact that the well-known biography of Amenemhab (Urk IV, 895, 16), places the death of Tuthmosis III in his 54th year on the last day of the seventh month, and affirms that Amenophis II, his son and successor, was already on the throne. The next morning . . . possibly -- it even amounts to a probability -- is that Amenophis II for exactly four months before the latter's death . . . the most important evidence is that in the Theban tomb of Dedi (No. 200), where the two kings were shown enthroned and inspecting a military display together.¹⁶

The archaeological evidence thus points to the condition of a co-regency of the aged Thutmose III and his young son Amenhotep II (Amenophis II). Amenhotep II obviously was not the first born of Thutmose III or he would have died in the tenth plague. The Bible declares very plainly in Exodus 12:29:

And it came to pass, that at midnight the LORD smote all the firstborn in the land of Egypt, from the firstborn of Pharaoh that sat on his throne unto the firstborn of the captive that was in the dungeon; and all the firstborn of cattle.

The concept that Amenhotep II was not a firstborn son, even though he was the next ruler, is acceptable when we study the record concerning similar situations. A later pharaoh, Rameses II, who also reigned a long period of time (67 years), was followed by a son who was his 14th. Likewise, Amenhotep II could have been a much later child than the firstborn of his father Thutmose III.

If Amenhotep II was not a firstborn son, who was the first born of the pharaoh who died in the tenth plague? The secular record appears to provide an answer. Co-regent Amenhotep II was followed many years later by his son Thutmose IV, but there is evidence that Thutmose IV was not a first born son. In the book *Bible and Spade* we read:

On an immense slab of red granite near the Sphinx at Gizeh it is recorded that Thotmes IV, while yet a youth, had fallen asleep under the famous monument and dreamed a dream. In this the Sphinx appeared to him, startling him with a prophecy that one day he would live to be King of Egypt, and bidding him clear the sand away from her feet in token of his gratitude, which on his accession, he did. It is clear from this inscription that Thotmes' hopes of succession had been remote, which proves, since the law of primogeniture obtained in Egypt at the time, that he could not have been Amenhotep's eldest son. In other words, there is room for the explanation that the heir apparent died in the manner related in the Bible.¹⁷

In other words, at the time of the Exodus, there were two pharaohs on the throne. The one was Thutmose III who died in the Red Sea. The other was Amenhotep II who was probably a son of Thutmose III, but obviously not the firstborn, for then he would have died in the plague. Since the next ruler, Thutmose IV, appears by the foregoing evidence to be a son later than the first born, we can readily assume that it was his brother, the first born of his father Amenhotep II, who was the son who died in the plague.

Therefore, we see that there is circumstantial evidence that young Amenhotep II, who ascended the throne just four months prior to the Exodus, lost his first born in the tenth plague as the Bible declares. His aged father, Thutmose III, who was co-regent with him,

died in the Red Sea as the Bible shows. The correlation of Egyptian history and the facts as recorded in the Bible is very precise indeed. All these puny efforts have only verified what has always been true: God's eternal Word. Let God be true

NOTES:

¹ John Van Seters, *The Hyksos*, Yale University Press, 1966, p. 185. (New York, Charles Scribner & Sons, 1899.)

² W. M. Flinders Petrie, *History of Egypt*, Vol. 1. pp. 260-262. In this index Petrie lists at least 150 names beginning with 'Ra' all found on tablets dating before the 18th Dynasty.

³ *Ibid.*, p. 69.

⁴ R. A. Parker, "The Lunar Dates of Thutmose III and Rameses II," *Journal of Near Eastern Studies*, Vol. 16 (1957), p. 41.

⁵ William C. Hayes, "Chronology," *The Cambridge Ancient History*, Cambridge University Press (1964), p. 17.

⁶ Sir Leonard Wooley, *The Beginnings of Civilization*, The New York American Library, 1965, p. 105.

⁷ W. M. Flinders Petrie, *History of Egypt*, New York, Charles Scribner & Sons (1904), p. 125.

⁸ He is variously called Thutmoses III, Thutmos III, Thutmosis III, Tothmosis III, etc.

⁹ *The Encyclopaedia Britannica* (1959 ed.), p. 58.

¹⁰ R. O. Faulkner, "The Battle of Megiddo," in the *Journal of Egyptian Archaeology* (London, The Egypt Exploration Soc., 1942), p. 4.

¹¹ W. M. Flinders Petrie, *A History of Egypt during the XVIIth and XVIIIth Dynasties*, New York, Charles Scribner & Sons (1904), p. 136.

¹² Arthur E. P. Weigall, *A Guide to the Antiquities of Upper Egypt*, The MacMillan Co. (1910), pp. 219-220.

¹³ Jack Finegan, *Handbook of Biblical Chronology*, Princeton University Press, 1964.

¹⁴ The Julian equivalents in “The Macedonian Calendar in Palestine” are doubtful. It seems as if the Macedonian month “Artemisios” should be placed opposite the Feb./Mar. equivalent as it appears in the Egyptian table. This is further suggested by the Early Roman Calendar depicted on p. 74 of Finegan’s book, *Handbook of Biblical Chronology*, where March is shown as the first calendar month.

1. Martius	7. Semtembris
2. Aprilis	8. Octobris
3. Maius	9. Novembris
4. Junius	10. Decembris
5. Quintilis	11. Januaris
6. Sextilis	12. Februarius

The logic behind this reasoning is clearly seen in the Latin prefixes and the corresponding numeral.

¹⁵ Breasted, *Ancient Records of Egypt*, Vol. 11, p. 34.

¹⁶ Alan H. Gardiner, *Reginal Years and Civil Calendar in Pharaonic Egypt*, Vol. 31 (1945), p. 27.

¹⁷ Stephen L. Gaiger, *Bible and Spade*, Oxford University Press, London, 1936, p. 74.

Chapter 10

The Israel Stela

We have identified the pharaoh who killed the new-born sons as Thutmose I, the princess who drew Moses from the water as Hatshepsut, the daughter of Thutmose I, the pharaoh who sought to kill Moses as King Hatshepsut, the pharaoh who would not let the children of Israel go and who was drowned in the Red Sea as Thutmose III, and the pharaoh whose first born was killed in the tenth plague as Amenhotep II. How wonderfully the sacred record provides foundation truth for the secular and the secular record provides fill-in information for the sacred.

Thus far in our attempt to mesh the sacred record with the secular record, we have discovered two very important astronomical dates that positively tie the two records together and provide a solid basis for expanding the secular dating of the pharaohs. The first date was the first year of the great Pharaoh Sesostris III of the 12th Dynasty which was 1888 B.C. as determined by a Sothic rising during his reign. That year precisely meets the Biblical chronological requirement of being two years before Joseph was made prime minister.

The second date was the first year of the greatest pharaoh of the 18th Dynasty, Thutmose III, whose last year, 1447 B.C., is established by a Sothic rising as well as two lunar dates during his reign. This coincides exactly with the Biblical date of the Exodus.

Because the sacred record is absolutely trustworthy, we should expect more synchronization with the secular evidence, especially when the secular chronological evidence is tied down by astronomical observation.

We shall now examine a third tie point. In doing so, we shall provide an explanation of one of the most puzzling yet significant tablets discovered in the ruins of antiquity.

A Stela Speaks

Among the tablets that have been unearthed in archaeological diggings, there is only one that speaks explicitly of Israel. Archaeologists discovered that it was written during the fifth year of Pharaoh Merneptah, who ruled near the end of the 13th century B.C. Because this stela mentions Israel, archaeologists have been ready to conclude that Israel was an independent nation at that time. Why Israel is mentioned in the stela is not easily determined. Had Egypt conquered Israel during Merneptah's reign? The stela records that "Palestine has become a widow for Egypt" and that "Israel is desolated, his seed is not." Let us study this stela to see the chronological tie point between Israel and Egypt.

The stela reads as follows:

The kings are overthrown, saying: "Salam!"

Not one holds up his head among the Nine Bows.

Wasted is Tehenu,

Kheta is pacified,

Plundered is Pекanan, with every evil,

Carried off is Askalon

Seized upon is Gezer

Yenoam is made as a thing not existing.

Israel is desolated, his seed is not.

Palestine has become a widow for Egypt.

All lands are united, they are pacified;

Everyone that is turbulent is bound by King

Merneptah given life like Re, Every day.¹

The great archaeologist Breasted concludes that the phrase "Palestine has become a widow for Egypt" must mean "Palestine has no protector against Egypt." This makes abundant sense, as we shall presently see. But can we be helped in our chronological synchronization with anything else on this stela?

The phrase "Israel is desolated, his seed is not" is the all-important phrase. At what time in Israel's history was the nation without seed? *There was indeed such a time.* It is recorded in the Book

of Judges. The Bible records the exploits of one of the greatest of the judges, Gideon. Under his leadership 120,000 of the enemy had fallen (Judges 8:10). The men of Israel were so happy with his ability that they wanted him and his descendants to rule over them (Judges 8:22). Gideon did in fact rule as judge for 40 years during which time the land had rest (Judges 8:28). No doubt in the eyes of the world this great leader was tantamount to a king. In fact, his son Abimelech did reign as a king for three years (Judges 9:16, 22).

Israel Is Without Seed

Upon Gideon's death, a terrible tragedy occurred. Abimelech, a son of Gideon by a concubine, murdered the seventy sons of Gideon upon one stone (Judges 9:5), in order to have no competitors for the kingship. Only one son escaped. Surely, this is the event to which Merneptah makes reference when he states, "Israel is desolated, his seed is not." This heinous and terrible crime, committed against the family that had brought peace and tranquility to the nation of Israel for so long, must have been a national tragedy of the gravest consequence. Insurrection, anarchy, civil war, were all possible on the heels of this great murder. Israel was without seed. There was no longer a ruling family except the murderer himself and one son who was himself. No wonder Merneptah concludes Palestine is without a protector and ripe for conquest.

When did this event, recorded on the Israel stela in the fifth year of Merneptah, occur? In the Biblical chronology we determined (Chapter 5) that Gideon died in the year 1207 B.C. This must have been the fifth year of Merneptah. His first year must have been either 1212 B.C. or 1211 B.C., depending upon what time of the year he became king.

The information we have thus far developed seems to be of no particular help in synchronizing the secular account with the sacred account. Actually, it appears as though we are on the wrong track for most archaeologists choose a date of 1225 B.C. or earlier for Merneptah's first year.

When we look to his father's reign, however, we see the precise concordance that does exist. Merneptah's father was the famous Rameses II, the pharaoh so many have incorrectly felt was perhaps the pharaoh of the Exodus. We know two very important facts of his life that relate to the question we are presently considering. The first is

that he reigned for a total of 67 years. This means that if our assumption is correct, Merneptah began to reign in 1212 or 1211 B.C., then Rameses II must have become king in 1279 or 1278 B.C. The other fact that we know from his life is that in his 52nd year a new moon occurred on II prt 27.² Within the possible limits of his reign, there are only a few years when the new moon could have occurred on this date. Parker shows that these are: 1253, 1250, 1239, 1228, and 1225. Accordingly, since these are the only years that could have been his 52nd year, the only years that could have been his first year are 1304, 1301, 1290, 1279, and 1276. Most archaeologists have looked at 1304 and 1290 as the most logical choices for his first year.

The dates of 1304 and 1290, while possibilities because of the astronomical “fix,” are not necessarily in either case the correct choice of the five possible dates named above. Archaeologists have opted for 1304 and 1290 because of very sketchy and incomplete information from the Assyrian and Babylonian chronologies. While these are quite helpful back to about 1100 B.C., they are of more doubtful value earlier. The Assyrians from the earliest period named their years after an annually-appointed official called a *limmu*. Accurate lists of these officials were compiled. They were especially accurate from June 15, 763 B.C., a date fixed by a record of an eclipse of the sun, back to the 11th century B.C. Earlier than the eleventh century, no *limmu* lists have been preserved but dates back to the 17th century have been preserved with an accuracy within a few decades or less. This is a result of king lists which have been found which are demonstrably based on earlier *limmu* lists. The Babylonian chronology has been figured back to about 1350 B.C. with a maximum margin of error of being about 50 years either way. Thus, the Assyrian chronology for the period of Merneptah’s reign does not help with precise dating. When we turn to the Biblical record, however, we discover a wonderful synchronization.

Let us again recall that the secular evidence based upon astronomical information gives five possibilities as the first year of Rameses II, who ruled 67 years and who was followed by Merneptah, who wrote the Israel Stela in the fifth year of his reign. These five years are 1304, 1301, 1290, 1279, and 1276. Let us begin with one of the five possible years, the year 1279 as the first year of Rameses II. He then would have died 67 years later in 1212 B.C. at which time his successor Merneptah would have ascended the throne. Merneptah’s fifth year, when the Israel Stela was written that describes a terrible tragedy in Israel, would then have been 1208 B.C. or more likely 1207 B.C. And

1207 B.C.³ coincides exactly with the terrible tragedy which enveloped the nation of Israel upon the death of Gideon.

Thus, we must conclude that Rameses II began to reign 1279 B.C. This is in agreement with the astronomical data and is permitted by the background information available from the Assyrian and Babylonian records. By means of Biblical chronological record it alone is proven to be the correct date.

After a reign of 67 years, Rameses II died and was followed by Merneptah who began to reign in 1212 B.C. In Merneptah's fifth year, the year 1207 B.C., Gideon, the ruler over Israel, died, and seventy of his sons were murdered. Merneptah took note of this sad and tragic event by recording it on what has become known as the Israel Stela.

We see not only the precise agreement between the language recorded on the Israel stela and the reasons for this, but we also see the perfect synchronization that occurs between the sacred and secular records once we have accepted the Bible as being scientifically and historically trustworthy. It is wonderful that God has given us at least three dates in history, reaching back almost 4000 years, that assure us of the validity of our solution to the Biblical chronology. Surely there must be many more points of synchronization that can be ferreted out by diligent research.

Let us approach the question of the timetable of man and the earth from an altogether different frame of reference. In the next chapter, we will leave Egypt and turn to an examination of the oceans.

NOTES:

¹ James H. Breasted, *Ancient Records of Egypt*, Vol. III, University of Chicago Press, 1906, p. 263.

² Richard A. Parker, "The Lunar Dates of Tutmose III and Rameses II," in *Journal of Near Eastern Studies*, Vol. 16, 1957, p. 41.

³ Please see Appendix VII for more discussion on this date.

Chapter 11

Let the Oceans Speak

We are certain that the Bible is accurate, authoritative, and trustworthy in every field of knowledge whether that be theological, historical, scientific, or any other. It gives us a very definite and precise chronological timetable that begins with the creation of this world and its first man Adam and covers the great historical events of the first 11,000 years of history. The evidence produced by the secular record is not at all in disagreement with the sacred record and the sacred record helps in a great fashion to place the secular record in proper perspective. Because the Bible is true and accurate in its accounts of people, places, and time, it can help to distinguish between what is true and false about the secular viewpoints.

Data from the observable universe concerning the history of the earth is becoming increasingly available as men search out the secrets of the universe. Does this evidence demonstrate that in spite of all that we have said thus far, the world must be far older than 13,000 years? Can we really expect to find correlation between the Biblical and secular records if we are going to insist on the literal interpretation of the creation story and the flood account? Is the evidence that shows that this world is billions of years old so conclusive that it is hardly worthwhile to expect complete reconciliation between the Bible and science?

To answer these questions, we shall examine some of the available evidence. It must be emphasized that because this world is under the bondage of decay, and much of the record is confused and obliterated by storms, floods, decay, fire, pestilence, and so forth, we cannot expect to reconstruct the history of the world in a complete and detailed manner. But from the secular record we should at least be able to obtain some indication of the timetable of the past.

Two areas of study seem to be quite fruitful in contributing information toward an answer to the question of the age of the earth. One study concerns the oceans; the other study concerns radioactive decay. Because of their importance in the development of modern

views of the earth's age, they must be honestly faced. Therefore, we shall study the oceans and radioactive dating.

The Oceans: A Key to the Past

In an earlier generation, scientists suggested that the oceans might be of real help in determining the age of the earth. As they thought about the problem of the earth's antiquity, their eyes were directed to the seas. After all, the seas completely surround the land masses and thus receive the output of the rivers that flow into them. The rivers carry sediment and chemicals in solution which have eroded from the continents. Scientists have assumed, therefore, that most of the chemical composition of ocean water is derived from the weathering of rocks. Sverdrup, et al., writes:

According to present theories, most of the solid materials dissolved in the sea originated from the weathering of the crust of the earth.¹

H. Kienen wrote in 1965:

Apart from meteoric dust and gaseous matter, the ultimate sources of all sediments are igneous and metamorphic rocks.²

Mr. Kuenen continued:

Ground water containing dissolved matter including silica, calcium, sodium, iron, magnesium, phosphorous, humic acids, etc., reaches the sea by way of rivers, or directly by seepage along the shore. Apart from gases, including carbon dioxide, derived directly from the atmosphere, this is the main source of dissolved matter in the sea water. . . A minor contribution comes from volcanic exhalations and from the expulsion of sea water trapped between the grains of the older marine sediments.³

Thus, today, scientists expect that the chemical content of the oceans should tell us much about the history of the earth. Because salt, NaCl, is the most abundant constituent of sea water and because both Na and Cl are present in the rocks, it was supposed that a knowledge of the amount of NaCl in the seas compared with the amount entering the seas each year by the weathering of the land would give a close approximation of the age of the earth. An earth age of about 100 million years was estimated by earlier scientists by following this assumption.

Then came other dating methods. By radioactive decay procedures, it was decided that the earth must be some four and a half billion years old. The 100 million years established by the ocean evidence was decisively rejected in favor of the longer radioactive age which provided a much more acceptable timetable for the presumed evolutionary developments. We now hear very little from researchers investigating the content of sea waters as far as total earth dating is concerned.

But the oceans are still with us. Since this world presumably has been around for more than four billion years, and since during much of this time, oceans as well as continents have existed, certain relationships and equilibriums must exist between the continents and the oceans. The earlier scientists' contention of an earth-ocean time relationship should still be valid. Assuming that the present activities in nature are a key to the past, we should be able to examine the relationship of the materials of the continents to those of the oceans and in this way arrive at some kind of a timetable for geological history.

Ocean Water Suggests a Time Schedule for History

As we have noted, geologists arrived at the conclusion that the chemical composition of the sea water and the ocean floor sediments are principally a product of the weathering of continental rocks. If this weathering of rocks was a short-time phenomenon, the sea water could be expected to contain far different proportions of one element relative to others than those proportions found within the average rocks of the continents. This is due to the fact that some rocks erode more easily than others and therefore, these easily-erodable chemicals should begin to be most abundant in sea water. The difference in relative chemical proportions would also be due to other variables, such as the fact that some elements are not as readily transportable by rivers and ocean currents as others and some are less soluble in water than others.

Nevertheless, if the time of erosion were long enough, the elements in the sea water and on the sea floor should approach an accurate reflection of the chemical content of the continental masses. For then even the hardest of rocks would be eroded, and even the least transportable minerals ultimately would be carried by the rivers to the sea. Thus, when scientists talk about millions of years we would

suspect that on a world-wide basis the proportion of one element in the sea water and on the sea floor to all other elements in the same environment should approximate the ratio of that element to all other elements in the continental masses, for in a very general way all the mass must somehow be conserved. For example, if the percentage of silicon in the continental masses is 27.5%, then if the oceans were old enough, we would also expect the total of all the silicon in the ocean water and on the ocean floor to approach 27.5%.

Furthermore, if we could know something about the total quantities of various elements in the seas and sea floor, and if we could know the approximate rate of world-wide erosion, we could estimate the length of time required to bring the elements into the ocean. This in turn should give us an approximate age for earth.

Fortunately, scientists have rather accurately determined the chemical composition of both the sea water and the land masses. Sverdrup *et al.* have prepared a table (Table I)⁴ that shows the amounts of various chemicals that should have entered the oceans during a period of 260 millions of years. This is the estimated length of time which would be required to provide the present quantity of salt in the ocean water assuming uniform weathering throughout this period of time. He writes that Goldschmidt (1933) estimates that to accumulate the present concentration of salt (NaCl) in solution, 600 grams of rock would have been weathered for each kilogram of water in the ocean. Thus, Table I shows that for each 600 grams of rock weathered, 17,000 mg (17 gr) of sodium were released for ultimate availability to the oceans. Likewise, 165,000 mg (165 gr) of silicon were released, and so forth.

With this estimate of potential elements available, one wonders what is the actual quantity of elements in sea water. The second column of Table I gives us this estimate. For example, in a kilogram of sea water there is on the average about 0.5 mg of aluminum in solution. This is only 0.001% of the estimated 53,000 mg expected if weathering had continued for as long as 260 million years, the estimated time required to provide the observed amount of salt. In fact, if we examine all of the elements listed in Table I, we are struck by the total lack of relationship between the chemicals in the ocean and the continents. For example, chlorine is 67 times too prevalent in sea water, nickel is 500,000 times too scarce. Silicon, which is one of the most common constituents of rocks, should be 50,000 times more plentiful in ocean water if it were to be proportionate to that in rocks.

Table I
Elements in Sea Water and in the Earth's Crust

Element	Sea Water	Potential 'supply' in 600 g of rock (mg/kg of sea water)	Percent- age in Solution
Silicon	4	165,000	0.002
Aluminum	0.5	53,000	0.001
Iron	0.002	31,000	0.0001
Calcium	408	22,000	1.9
Sodium	10,769	17,000	65
Potassium	387	15,000	2.6
Magnesium	1,297	13,000	10
Titanium	. . .	3,800	?
Manganese	0.01	560	0.002
Phosphorus	0.01	470	0.02
Carbon	28	300	9
Sulphur	901	300	300
Chlorine	19,353	290	6700
Strontium	13	250	5
Barium	0.05	230	0.02
Rubidium	0.02	190	0.1
Fluorine	1.4	160	0.9
Chromium	p	120	?
Zirconium	. . .	120	?
Copper	0.01	60	0.02
Nickel	0.0001	60	0.002
Vanadium	0.0003	60	0.0005
Tungsten	. . .	41	?
Lithium	0.1	39	0.2
Cerium	0.0004	26	0.002
Cobalt	p	24	?
Tin	p	24	?
Zinc	0.005	24	0.02
Yttrium	0.0003	19	0.002
Lanthanum	0.0003	11	0.003
Lead	0.004	10	0.04
Molybdenum	0.0005	9	0.005
Thorium	0.0005	6	0.01
Cesium	0.002	4	0.05
Arsenic	0.02	3	0.7
Scandium	0.00004	3	0.001
Bromine	66	3	2000
Boron	4.7	2	240
Uranium	0.015	2	0.8
Selenium	0.004	0.4	1
Cadmium	p	0.3	?
Mercury	0.00003	0.3	0.001
Iodine	0.05	0.2	25
Silver	0.0003	0.06	0.5
Gold	0.056	0.003	0.3
Radium	0.093	0.066	0.05

Perhaps the reason for this total disproportion between the expected volumes of elements in the sea water and their actual occurrence is that the sea water will hold in solution only a tiny bit of each element such as silicon with the balance going out of solution to the sea bottom either by precipitation or by the action of organisms. This, however, does not appear to be the case. For example, sea water is not saturated with silicon. F. A. J. Armstrong writes:

Sea water is undersaturated with respect to silica, although since reported values for its solubility are somewhat inconsistent, it is not possible to say how much.⁵

Kuenen writes:

Under normal conditions, sea water is not supersaturated with any product, and circulation is automatically set up in areas of excess evaporation, preventing the formation of excessive concentrations.⁶

Thus, the evidence appears to indicate that not only are many elements far too insufficient in ocean water as compared with the quantities that should be present if the oceans were millions of years old but that the evidence points to the fact that sea water in general is not saturated with chemical elements. This suggests a very young ocean. If the ocean had existed long enough, those elements which are especially soluble would have reached a saturated condition in many parts of the world.

The unsaturated condition of the oceans also suggests that they should provide a reasonable tool for measuring their age. This is a result of the fact that an estimate can be made of the average annual quantity of chemicals flowing into the ocean from the rivers. Dividing the total quantity of an element existing in an unsaturated condition in ocean solution by the quantity of the same element flowing into the ocean should give us some concept of the ocean's age.

Table II⁷ gives us this information. We see that it would have taken 2.0×10^7 (20 million) years of continental weathering to supply all of the lithium (Li) presently found in this in ocean solution. Likewise, sodium (Na) would have presumably been accumulating some 2.6×10^8 (260 million) years.

When we look at Table II more closely, we discover a very strange fact. Some of the elements are in very short supply in the oceans. Aluminum, for example, has such a tiny quantity in ocean solution that 100 years of continental weather would have provided it. In fact,

Table II
Residency Periods for Chemicals in Ocean Solution
(Years)

Lithium	Li	2.0 x 10 ⁷	Silver	Ag	2.1 x 10 ⁶
Beryllium	Be	150	Gadolinium	Gd	5.0 x 10 ⁵
Sodium	Na	2.6 x 10	Tin	Sn	1.0 x 10 ⁵
Magnesium	Mg	4.5 x 10 ⁷	Antimony	Sb	3.5 x 10 ⁵
Aluminum	Al	100	Barium	Ba	8.4 x 10 ⁴
Silicon	Si	8.0 x 10 ³	Lanthanum	La	400
Potassium	K	1.1 x 10 ⁷	Cerium	Ce	80
Calcium	Ca	8.0 x 10 ⁶	Praseodymium	Pr	320
Scandium	Sc	5.6 x 10 ³	Neodymium	Nd	270
Titanium	Ti	160	Samarium	Sm	180
Vanadium	V	1.0 x 10 ⁴	Europium	Eu	300
Chromium	Cr	350	Dysprosium	Dy	460
Manganese	Mn	1400	Holmium	Ho	530
Iron	Fe	140	Erbium	Er	690
Cobalt	Co	1.8 x 10 ⁴	Thulium	Tm	1800
Nickel	Ni	1.8 x 10 ⁴	Ytterbium	Yb	530
Copper	Cu	5.0 x 10 ⁴	Lutetium	Lu	450
Zinc	Zn	1.8 x 10 ⁵	Tungsten	W	10 ³
Gallium	Ga	1.4 x 10 ³	Gold	Au	5.6 x 10 ⁵
Germanium	Ge	7.0 x 10 ³	Mercury	Hg	4.2 x 10 ⁴
Rubidium	Rb	2.7 x 10 ⁵	Lead	Pb	2.0 x 10 ³
Strontium	Sr	1.9 x 10 ⁷	Bismuth	Bi	4.5 x 10 ⁴
Yttrium	Y	7.5 x 10 ³	Uranium	U	5.0 x 10 ⁵
Niobium	Nb	300	Thorium	Th	350
Molybdenum	Mo	5.0 x 10 ⁵			

nineteen of the elements found in sea water are found in amounts less than that which would be provided in 1,000 years of continental weathering. This startling information suggests two conclusions:

1. The oceans must be very young because small quantities of many of the elements are in solution.

2. The oceans must be very young because of the wide discrepancy of residency periods of various chemicals. Differential erosion over a relatively short period of time together with other variables such as water transportability and solubility of elements would account for the wide spread in residency times.

One other fact should be noted in this regard. Chlorine, sulphur, bromine, and boron exist in much larger amounts than that which would be supplied while the sodium was being weathered from rocks into the ocean waters. This suggests a third conclusion.

3. That salt (NaCl) and perhaps a number of other chemicals are in the oceans completely apart from normal rock weathering.

A Look at Sediments

Even though the sea water does not appear to be saturated with many, if any, of the chemicals that enter it, perhaps they were taken out of solution in some manner. The paucity of so many of the chemicals in the oceans suggests that they may have been taken out of solution. It is true that the mechanisms of solution in, and the removal from, sea water are rather complex and scientists are busily engaged in attempting to understand them. But if the chemicals are not in the sea water, they must be on the sea floor. Therefore, even though the chemicals in the water do not relate quantitatively to those in the rocks, surely the remainder would be found on the sea floor, with the overall chemical content reflecting an ancient ocean. The facts, however, do not indicate this.

Obviously, much more work must be done before a complete analysis of the quantity and composition of the sea floor sediments can be known. Already many cores have been taken and there is much literature that is available concerning this question. The present knowledge is perhaps summed up by the comment of H. Kuenen:

The differences in composition between oceanic and continental sediments, both as to major constituents and trace elements, are large.⁸

In other words, whether we look to the composition of sea water or to the composition of the ocean sediments, there is little to suggest a long-time relationship between the oceans and the continents.

Wilson sets forth these problems when he writes:

The failure to recover any rocks older than Cretaceous from the ocean floors suggests that the ocean basins may be younger than the continents. It has also become evident that the petrology, sedimentations, and structural geology of ocean basins are quite different from those of continents . . . the ocean basins and oceanic islands are dramatically different from continents in crustal thickness, age, composition, ore deposits, structures, magnetic anomalies and in the patterns and characteristics of their active mountain belts and earthquakes. Several continents have rocks at least 3.2×10^9 years old, which is 20 times the age of the oldest oceanic island, dredging or core.⁹

Thus, we see by the tremendous chemical disproportions between the oceans and the continents that a very young ocean is the most probable conclusion. Let us now examine the ocean sediments from another aspect. If we knew the annual amount of sediments flowing by rivers into the ocean basins and had some idea of the volume of sediments on the ocean floor, dividing the first quantity into the second should give us the approximate age of the oceans. Or to put it another way, if we knew the annual quantity of sediments flowing into the oceans, we could multiply this figure by say 100 million years, four and a half billion years, or any other length of time which we believe approximates the age of the earth, and be able to estimate the average thickness of sediments on the ocean floor.

Let us compute the thickness of sediment that should be found if the oceans were 260 million years old as suggested by their salt content. We shall begin by figuring the quantities added to the oceans by the rivers of the world. Clark¹⁰ (1924) has estimated that the rivers contribute 2.73×10^{15} grams of dissolved solids to the sea each year. In the 2.6×10^8 years that it presumably took to provide the sodium in the oceans a total of 7.1×10^{23} grams would have been provided. Of this total 5×10^{22} grams are presently in solution¹¹ in the ocean water indicating that $(71.0 \times 10^{22}) - (5 \times 10^{22})$ or 66.0×10^{22} grams should have gone out of solution and become sediment. A small part of this may have been recycled due to ocean spray, etc., but the major part must still be present somewhere in the oceans.

The estimate of 66×10^{22} grams of sediment might be checked by approaching the question from another viewpoint. Sverdrup *et al.*, writes¹² that Goldschmidt (1933) estimates that to accumulate the present concentration of salt (NaCl) in ocean solution, a total of 600 grams of rock has been weathered for each kilogram of water in the ocean. This is the basis upon which Table I was developed. Since there are 278 kg. of water for each square centimeter of the earth's surface, and the area of the earth's surface is 5.1×10^{18} kg., the total weight of water equals

$$278 \times 5.1 \times 10^{18} \text{ kg.} = 1.42 \times 10^{21} \text{ kg.}$$

Goldschmidt further estimates that for every 600 gr. of rock that has been weathered, 65% or 390 grams actually should have become available for solution in the oceans or as sediment on the ocean floor. This equals $390 \times 1.42 \times 10^{21}$ grams = 5.53×10^{23} grams. Since 5×10^{16} metric tons or 5×10^{22} grams are in solution, the amount that must have become sediment equals 55.3×10^{22} grams - 5×10^{22} grams or 50×10^{22} grams. This is very close to the 66×10^{22} grams based on Clark's estimate of river sediments.

With the knowledge that there are presently an estimated 5×10^{22} grams of chemicals in ocean solution and that there should be at least another 50×10^{22} grams in sediments (based on an ocean age of 260 million years), let us determine what the ocean floor should look like. Svendrup¹³ estimates that if the 5×10^{22} grams of chemicals which are presently in ocean solution could be extracted, they would provide a layer of salts 45 meters thick over the entire earth. Since the oceans cover 70.8% of the earth's surface, this hypothetical layer would be 63.5 meters thick on the ocean floor.

Since we have seen that an ocean 260 million years old should have provided sediments equal to a minimum of 50×10^{22} grams, we would therefore expect an average sediment depth of ten times 63.5 or 635 meters or 2100 feet (with the ocean area the same), that is, if the continents had been weathering uniformly for 260 million years. Since the continents presumably have been here far longer (minimum 3 billion years), one could logically expect the sediments should be far deeper than 635 meters. In fact, by this time the oceans should have almost filled up and the land should have been eroded to level plains. The mountain building presumed to have taken place a few hundred million years ago would have changed these figures a bit, but the basic concept of the oceans filling with sediment as the land masses eroded should hold true.

Let us now examine the evidence as far as the ocean sediments are concerned. In 1949, Maurice Ewing wrote in the *National Geographic Magazine* concerning the exploration of the floor of the Atlantic Ocean:

In more than 3,000 places over vast areas of the Atlantic we have now measured with sound echoes, the depth of the sediment on top of the bed-rock of the ocean floor. These measurements clearly indicate thousands of feet of sediments on the foothills of the Ridge. Surprisingly, however, we have found that in the great flat basins on each side of the Ridge this sediment appears to be less than 100 feet thick, a fact so startling that it needs further checking.¹⁴

Much of the Pacific floor, too, is covered by sediments under 100 meters in depth,¹⁵ with some areas as thin as 20 meters.¹⁶ The following statement relates to investigation of the East Pacific Rise:

A deep-towed magnetometer profile made across the East Pacific Rise crest shows sediment accumulation increases from less than 2 meters at the rise crest axis to about 20 meters at the western end and 10 meters at the eastern end of the profile.¹⁷

Evidence from the oceans is not automatic support for the view of a very old earth. In fact, the evidence appears to point to the opposite conclusion. Patrick M. Hurley wrote in the *Scientific American*:

The topography of the ocean floors has been rapidly revealed in the past two decades by the depth recorder. . . . It became a great puzzle how in the total span of earth's history only a thin veneer of sediment had been laid down. The deposition rate measured today would extend the process of sedimentation back to the Cretaceous times, or 100 to 200 million years, compared with a continental and oceanic history that goes back at least 3,000 million years. How could three-quarters of the earth's surface be wiped clean of sediment in the last 5 per cent of terrestrial time? Furthermore, why were all the oceanic islands and submerged volcanoes so young?¹⁸

Kuenen writes:

Two great problems challenge earth sciences in this domain. The huge wedge of terrace sediment underlying the shelf off the east coast of the United States has been built up in little more than in 108 years, that is, in less than 2 or 3 per cent of geological time.

What has happened to the terraces that must have been produced earlier? Have they subsided into the mantle and been absorbed, have they been pushed under the continents, or have they been incorporated into mountain chains? The second problem is the discrepancy between the estimated thicknesses on the deep sea floor, and the values actually found. Various suggestions have been offered, (1) the layers below the unconsolidated sediment are mainly consolidated deposits; (2) the rate of sedimentation has been much slower than in recent times, especially in pre-tertiary times; (3) creep of the sea floor under the continental blocks under the influence of convection currents in the mantle; (4) the ocean floor is relatively young; (5) the sedimentary carpet has been invaded from below and metamorphosed so completely as to become basic rock.¹⁹

Here then is a great enigma. If the oceans are only hundreds of millions of years old, sediments averaging 600 or more meters (2000 ft.) should be found all over the ocean floor. Instead sediments are normally found to be far less than this, and in many cases, the ocean floor is almost bare of sediment. No theory outside of that of a very young ocean has thus far been set forth that seems as plausible or direct. If the age of the earth is truly billions of years, then the puzzle of the missing ocean sediments is enormously increased.

Summary

To summarize this chapter, the following truths suggest themselves.

1. There appears to be a great discrepancy between the three or four billion year age derived from radioactive decay data and the evidence obtainable from the oceans. Either the ocean data is completely untrustworthy or there is a question regarding the dependability of radioactive dating.
2. If the accumulation of sodium by the weathering of continental rocks as a part of NaCl in the oceans is the guide for the age of the oceans a number of unanswerable problems remain.
 - a. Some chemicals (Cl, Br, etc.), must have been a part of the oceans since the beginning or they must have been introduced apart from rock weathering.
 - b. The sediments in the ocean should be much thicker than actually found.

c. Almost all the other elements which supposedly weathered while the sodium was weathering are in far too short supply to allow for a weathering period of 260 million years which is required to bring this amount of sodium into the oceans. Therefore, using NaCl as a standard results in an untenable solution.

3. If the accumulation of the other major constituent of the ocean salts, chlorine, is to be the guide to age dating, the following would obtain.

a. An accumulation period of about 2 or 3 billions of years would result. This is much closer to the radioactive age determination. The oceans can then be considered to have been devoid of chemicals in solution at one time in its history.

b. This would compound the sediment problem. In this long period of time the oceans would have filled with sediment.

c. This also provides no answer for the short supply of many of the ocean chemicals. This, too gives an untenable solution.

4. If the accumulation of the smallest amounts of chemicals is used for age dating the following would obtain.

a. The apparent age of the ocean would be under 1,000 years.

b. The ocean would have begun with essentially its present complement of salt and several of the other chemicals. We know from other histories that this solution is untenable.

5. Another conclusion suggests itself as the only plausible one in light of the Biblical statement as well as in the light of the evidence forthcoming from studies of the oceans. That conclusion is that the ocean and the earth is 13,000 years old as the Bible teaches. This conclusion is supported by the following secular evidences.

a. The elements in the ocean water are not found in a saturated condition, thus indicating that the flow of chemicals into the ocean is a short-time phenomenon.

b. The proportions of elements found in the water or on the ocean floor bear no relationship to the proportions found in the continents. Such variables such as resistance to erosion, water transportability, and solubility and others, over a very short period of weathering accord with these extreme

differences in chemical proportions. This, too, points to a very young ocean.

c. The fact that many of the chemicals in ocean solution are present in amounts that could have been provided within the last 1,000 years or less if all rocks were equally susceptible to erosion, points dramatically to the 13,000 year age of the earth. This is precisely what would be expected in view of the differences in erosion resistance, solubility, etc., of the continental rocks. Easily erodable rocks would have provided elements in excess of those expected within 13,000 years whereas very hard rocks would provide far less than that expected in 13,000 years of history.

d. The thin layer of sediments on the ocean floor also point to a very young earth. This is especially true when we consider the cataclysmic worldwide flood of Noah's day. It alone must have provided enormous quantities of sediments for ocean solution and disposition. In fact, its impact upon the oceans was so severe that no accurate estimate of time will ever be derived from the ocean chemicals.

e. The fact that certain salts such as NaCl are in such abundance in ocean solution strongly suggests that they have been present in essentially their present quantities from the very beginning.

The all-important fact remains that even without considering the effect of the flood on the oceans, we must conclude that under no circumstance may we consider that the ocean evidence points to an age of millions of years. When recognition is given to the Noachian flood sediments which must be subtracted from the elements in the oceans, then we arrive more emphatically than ever at a very young ocean. The 13,000 year date of the Bible appears to be the only true alternative to the present theories of a very old earth.

NOTES:

¹ H. U. Sverdrup, Martin W. Johnson, Richard H. Fleming, *The Oceans*, Prentice-Hall, Inc., New York, 1942, p. 219.

² H. Kuenen, "Geological Conditions of Sedimentation," *Chemical Oceanography*, J. P. Riley and G. Skirrow (ed.), Academic Press, London and New York, 1965, Vol. 2, p. 1.

³ *Ibid.*, p. 4.

⁴ H. U. Sverdrup, *The Oceans*, p. 220.

⁵ F. A. J. Armstrong, "Silicon," *Chemical Oceanography*, J. P. Riley and G. Skirrow (ed.), Academic Press, London and New York, 1965, Vol. 2, p. 410.

⁶ H. Kuenen, *Chemical Oceanography*, p. 5.

⁷ *Ibid.*, Vol. 1, p. 164.

⁸ *Ibid.*, Vol. 2, p. 20.

⁹ Teyo J. Wilson, "Theories of Building of Continents," *The Earth's Mantle*, T. F. Gaskell, Academic Press, London and New York, 1967, p. 447.

¹⁰ H. U. Sverdrup, *The Oceans*, p. 172.

¹¹ *Ibid.*, p. 219.

¹² *Ibid.*, p. 219.

¹³ *Ibid.*, p. 219.

¹⁴ Maurice Ewing, "New Discoveries on the Mid-Atlantic Ridge," *National Geographic Magazine*, Nov., 1949, pp. 612-613.

¹⁵ John Ewing, *et al.*, "North Pacific Sediment Layers Measured by Seismic Profiling," *The Crust and Upper Mantle of the Pacific Area*, William Byrd Press, Richmond, Va., 1968, pp. 150, 165.

¹⁶ *Ibid.*, p. 148.

¹⁷ Roger L. Larson and Fred N. Spiers, "East Pacific Rise Crest, a Near Bottom Geophysical Profile," *Science*, Jan. 3, 1969, p. 68.

¹⁸ Patrick Hurley, "The Confirmation of Continental Drift," *Scientific American*, April, 1968.

¹⁹ Kuenen, *Chemical Oceanography*, Vol. 2, p. 20.

Chapter 12

Earth's Radiocarbon Timepiece

Thus far in our study of the secular evidence that relates to the age of the earth, we have seen that the oceans potentially offer great help in tying together the secular and sacred records. Not only do they reveal, from many standpoints, the impossibility of an earth with an age of billions of years, but they point rather dramatically to the truth that the earth is only thousands of years old. Thus, the evidence produced from a study of the oceans meshes consistently with the trustworthy record of the Bible which gives us a date of 11,013 B.C. for the creation of our earth.

What about other dating methods? Do they show an earth age of four and a half billion years? Do they demonstrate that man is at least two million years old? We should examine at least one of the major dating methods to discover some of the reasons for the discrepancies that exist between the Bible and ocean data on the one hand, and the radiometric dating method on the other.

Within the last few decades, scientists have discovered what appears to be a tremendous tool which has been used in an attempt to reconstruct the timetable of the past. This tool is derived from a study of radioactive isotopes. Many of the elements of which this planet is composed exist in forms of different atomic weights. These forms are called isotopes. For example, the element potassium exists as the isotopes K^{39} , K^{40} , and K^{41} . Some of these isotopes are unstable. Over a period of years some of the unstable atoms lose particles by radioactive decay and change into other elements. The most abundant isotope of potassium is K^{39} and it does not change. The least abundant is K^{40} and it is unstable both with respect to beta emission and electron capture. Each atom of potassium of atomic weight 40 will be transmuted either by emission of a beta particle to become an atom of calcium (Ca^{40}) or by electron capture to become an atom of

argon (Ar^{40}). Thus, the relative abundance of K^{40} is decreasing and that of Ca^{40} and Ar^{40} is increasing with time. By careful analysis, the rate of this change or decay can be measured. In the case of K^{40} , 1290 million years will be required for half of the atoms of K^{40} in existence today to become atoms of Ca^{40} or Ar^{40} . The half life of K^{40} is, therefore, 1290×10^6 years.

By making certain assumptions regarding the mineralogic and petrologic factors, the geologic environment, and other conditions that existed at the time of the formation of the specimen being studied, it is possible to apply the knowledge of its half life to arrive at an estimate of its age, that is, at least the age from the last crystallization of the rock. Not only potassium but uranium, lead, rubidium, and other elements can be used in this kind of age dating. As a consequence of this age dating possibility, scientists have decided that the earth must be about four and a half billion years old.

Are Radioactive Dating Assumptions Correct?

There are major drawbacks to this method of dating. First of all, we lack knowledge concerning the validity of all the assumptions made about the conditions that existed on the earth during the initial span of time since its beginning. Therefore, dates derived from radioactive decay measurements could be in serious error. Moreover, we lack other reliable dating methods that are tested and proven accurate by which we can check our radioactive dates. For example, we have already seen how the ocean evidence gives us a conclusion that is much different from an earth age of some billions of years. If we did have another reliable method and found a lack of concordance, we could modify our assumptions until we knew we were using the radioactive evidence properly. We shall presently see how this can be done with radioactive carbon. Finally, while we may arrive at approximately concordant dates using different isotope methods to date the same rock, we cannot know for sure whether these concordant dates are a result of having found an accurate age or if they are a result of some ancient phenomena that synchronized the atomic clocks. For example Richard Armstrong writes:

On all micas both K-Ar and Rb-Sr dates may be determined. This provides a useful check although it is known that even concordant results are not necessarily a significant measure of age.¹

Potassium-Argon Dating Reveals Many Anomalies

Potassium-argon dating is a method which can be used to illustrate the potential for arriving at incorrect dates because of lack of knowledge concerning the conditions that existed at the time the rock under study was formed. These isotopes have been used in dating rocks supposedly as young as a few hundred thousand years or as old as several billions years. The assumption must be made, in using this dating method, that at the time the rock was formed, any initial Argon⁴⁰ gas which would come from the atmosphere was entirely driven off. Thus, any Argon⁴⁰ found in the rock presently must be assumed to be a result of potassium decay since the rock was crystallized from a molten condition. Richard Armstrong writes of this but also indicates a problem that is raised because of this assumption.

One of the basic conditions for K-Ar dating is that the mineral phase dated contained no primary Ar⁴⁰ at the time of its origin. This is never strictly true. In the natural environment, particularly at great depths within the crust, excess Ar⁴⁰ is present in whatever fluid phases exist. During remobilization of an ancient metamorphic terrane quite high Ar pressures might develop. No mineral phase ever crystallizes absolutely free of contamination from its environment; this contamination may occur on an atomic scale with foreign atoms being accidentally trapped in the crystal lattice, or as bulk contamination in the form of solid and fluid inclusions. It is only logical to accept that a finite Ar⁴⁰ background must exist for every mineral. The practical question is to what extent this background affects mineral dates.²

A practical result of this problem of original Ar⁴⁰ can be very significant in young rocks. G. H. Curtis³ writes of tufts of the Eifel volcanic districts of Germany that gave an age at least two million years greater than it should be based on ages of tufts below it. This, incidentally, is the kind of material and the dating method used by Dr. Leakey in arriving at dates of the earliest man in Oldevai Gorge in Africa.

David Fisher et al. reports concerning dating of basalt on the sea floor by K-Ar dating, state that, "We have observed large amounts of Ar⁴⁰ in some rocks, leading to anomalously high ages . . ." ⁴ C. S. Noble and J. J. Naughton report that some lavas which are very young, probably less than 200 years old, showed ages as high as 21×10^6 years when dated by potassium argon. He adds:

... in some instances volcanic rocks erupted into the deep ocean, do in fact inherit radiogenic argon and helium, and when dated may yield unrealistic old ages.⁵

Tektites and Potassium-Argon Dating

Another problem that can be offered is related to the dating of tektites. In many places in the world small pieces of glass shaped like buttons have been found. These are called tektites. Scientists have been quite intrigued by these tektites, wondering if they are of moon or of meteorite origin, or if they are indeed of this planet. They are found especially in four rather large strewn fields at several locations on the earth. The largest strewn fields are in Australia where tektites are found over almost the entire continent. These Australian tektites are called australites.

Scientists have become thoroughly acquainted with tektites: their shape, chemical composition, extent of appearance in a strewn field, and other factors. They discovered that they do have a potassium content as well as an Argon⁴⁰ content. Because of their chemical nature and non-granular structure, there is every appearance that they were formed at high temperature and were extremely resistive to contamination. They are, therefore, apparently ideally suited to dating by the K-Ar method. Indeed, the tektites of most of the fields appear to show an age by the K-Ar method which is in reasonable agreement with the geological strata in which they were found. Thus, the tektites found in Texas, which is another of the strewn fields, show a K-Ar age of about 35 million years, and are found in strata that has been dated by other methods to be 35 to 55 million years of age.

The problem is raised with the tektites of Australia, the australites. These date quite uniformly over the entire continent of Australia at about 700,000 years. Unfortunately, however, they are found in strata that is recent. Baker concludes they were emplaced not over 6000 years ago and not under 3000 years ago.⁶ Moreover, some of their physical characteristics also indicate recent emplacement. No scientist to the present time has suggested a rationale for an older strata than some 5000 years.

Here then is a major problem. Tektites are quite common; so many tests on them can be made. All signs indicate high formation temperatures and, therefore, probably good accuracy when this method of dating is used. But the emplacement conditions indicate

they were formed about 5,000 years ago. If the Argon⁴⁰ found in them was that which remained at formation it would then cast suspicion on the dates of all tektites in view of the similarities that exist between all tektites, and if the dating of tektites by K-Ar is invalid, then all dating by K-Ar is suspect. This in turn would cast doubt on those dating methods showing concordant dates with K-Ar, and invalidate the present application of these methods.

This problem has been outlined at length to indicate that all is not conclusive as far as dating is concerned. An accountant is as concerned about a few cents in his balances which cannot be reconciled as he is about a large sum of money. The few cents of error could be an indication of offsets of several thousand dollars. So the individual problems in radioactive time measurements could be an indication of presently unknown information that could lead to an altogether different conclusion regarding these dating methods.

Cosmic Rays And Isotopes

Robert L. Whitlaw raises another serious problem in relationship to K-Ar dating. He points out that atmospheric argon today is 99.6% Ar⁴⁰, 0.337% Ar³⁶, and 0.063% Ar³⁸, all the isotopes being stable. He continues that the assumption is made that:

If the . . . argon taken in a rock sample contained an infusion of atmospheric argon, it would show up by the presence of Argon³⁶, since the argon that decayed from potassium in the specimen would be pure Ar⁴⁰ This being so, it becomes a simple matter to measure the quantity of Ar³⁶ in the specimen, multiply it by 295.6 (i.e. the Ar⁴⁰/Ar³⁶ ratio in the air) to determine the amount of Ar⁴⁰ that came in from the atmosphere and finally to subtract this amount from the total Ar⁴⁰ found.

The remainder would be the Ar⁴⁰ formed from potassium alone. He goes on to suggest that this line of reasoning will work only if the ratio of Ar³⁶ to Ar⁴⁰ in the atmosphere has remained constant over the eons of time. Whereas there is no data to support this constant ratio, there is an indication that Ar³⁶ is produced by the action of cosmic rays, thus indicating an increase in atmosphere Ar³⁶ with time. He states:

It can be shown that Ar³⁶ is a probable product of cosmic radiation bombarding the earth's outer atmosphere, just as is radiocarbon.

Several nuclear reaction sequences leading to Ar^{36} in the presence of free energetic neutrons and photons can be shown.⁷

His suggestion that Ar^{36} is a product of cosmic ray flux is reinforced by statements by other scientists. J. R. Arnold and M. Honda write:

The meteorites are targets containing a record of the cosmic-ray bombardment to which they have been subjected.⁸

E. Vilisek and H. Wanke report Ar^{36} is produced by cosmic rays. They indicate:

The cosmic ray exposure age of a meteorite can be calculated if one knows the concentration of a stable cosmic-ray produced isotope as well as the decay rate of a corresponding radioactive isotope at the time of the meteorite's fall. Such favorable pairs are H^3 , $\text{Na}^{22}/\text{Cl}^{36}/\text{Ar}^{36}$, $\text{Ar}^{39}/\text{Ar}^{36}$, $\text{K}^{40}/\text{K}^{41}$, and others.⁹

P. R. Goel and T. P. Kohman add their comments to the idea of Argon³⁶ being produced by cosmic rays.

The reaction products of cosmic-ray interactions in meteoroids include both stable and radioactive nuclides. The concentration of a stable cosmogonic nuclide, which accumulates during the whole exposure, represents the total dosage that the specimen has received. Wanke has shown that in large iron meteorites, significantly different values of the $\text{Ar}^{36}/\text{Cl}^{36}$ cosmic-ray exposures age are found among different specimens of a given fall, the difference being mainly due to the widely different Ar^{36} contents. This shows that different portions of the meteoroid have been exposed to cosmic radiation for different durations of time.¹⁰

This problem of the origin of isotopes by the action of cosmic rays is a very serious one if these isotopes are to be used for dating purposes. We shall presently see substantial evidence suggesting that cosmic ray activity began only 13,000 years ago. This would then throw into complete disarray any dating method that utilized cosmic ray-produced isotopes as the potassium-argon method does and which assumes that cosmic activity had continued for millions of years.

There is one radioactive isotope, however, that is in a class by itself. This is by virtue of the fact it has a half life of only 5730 years and because it is found not only in inorganic materials but also in

organic materials. The short half life makes possible the dating of materials in historical time where many checks can be made by completely independent dating methods of known accuracy. Moreover, the dating of organic materials permits the dating of a wide range of specimens such as wood and bones, as well as inorganic rock. This is known as radiocarbon dating. We shall now examine this in great detail.

Earth's Radiocarbon Timepiece

Within the last two decades, scientists have discovered this fascinating and apparently reliable tool for the dating of organisms which have died within the last several millennia. Natural carbon occurs in several isotopes, the most plentiful of which is carbon 12. It is found especially as the carbon in carbon dioxide of the air which we breathe and as the dissolved carbonates in ocean water, as well as the carbon in the fossil fuels and sedimentary rock carbonates. While C12 is stable, the carbon isotope C14 disintegrates into C12 with a half life of 5730 years. Wherever C12 is found in living organisms, C14 atoms can be found with it in the approximate same proportion as it occurs worldwide, dissolved in the ocean, in living organisms, in the biosphere and in CO₂ of the atmosphere. This ratio is known as the specific radio activity of carbon which we will designate as "I." When a living organism such as a tree, a shell fish, or an animal dies it ceases to be a part of the exchange reservoir of carbon. No longer does its "I" value conform to that of the rest of the world. From the moment of death the C14 atoms begin to disintegrate at a constant rate so that 5730 years later only one half of the C14 atoms remain and its new "I" value is one half of that at the time of death. Thus, it is possible to measure the "I" value of any specimen that died hundreds or thousands of years earlier and make an accurate estimate of the year of death.

Among a number of assumptions, two very important ones must be made. The first is that the "I" value in the world can be known at the time the specimen died, and secondly, that the specimen itself has not been contaminated subsequent to death.

Since no one living centuries or millennia ago took measurements, scientists have always assumed that the "I" value has

remained reasonably constant over the last several tens of thousands of years. And because specimens dated by Carbon 14 could be date checked by tree rings, written history, and other ways, there appeared rather close agreement between the conclusions of Carbon 14 dating and these other methods.

As more and more specimens have been dated, however, scientists discovered that C14 is not the all-purpose dating tool many hoped it would be. They discovered that even within the last 2250 years, discrepancies of 100 years or more were possible.¹¹

Earlier than about 250 B.C., however, C14 dating begins to get increasingly inaccurate. Going back as far as 4000 B.C. the true date of a specimen is generally known to be older by several hundred years than the date established by C14 dating. The formula for this discrepancy has been shown to be roughly:¹²

$$T = 1.4R - 1100 \text{ (Equation 1)}$$

where T is the true age and R is the radiocarbon age. Thus, a specimen which is shown to be 4000 years old by radiocarbon dating is probably closer to 4500 years old, in actuality.¹³

These corrections and refinements have not invalidated C 14 as a dating tool, but have shown the necessity for more care in evaluating results, and more study to attempt to understand the changes in "I" value over the past millenniums. This brief summary is given to outline some of the known limitations and strengths of the C14 dating method. Because we have established, by Biblical reckoning, 11,013 B.C. as the oldest possible date for living organisms to have existed upon this earth, the results of carbon 14 dating are especially interesting. Dates of thirty or forty thousand years have been discovered by C14 dating. For example, at the Heifers Outwash on the shores of the Caspian Sea, carbon samples have been tested which show human occupancy some 43,000 years ago. Even if this were in error by thirty or forty percent, a date far older than 11,000 B.C. would result. How can this be squared with the Biblical record?

We found in the previous chapters that the Biblical record is the trustworthy record. Therefore, results from the radiocarbon dating method must be carefully analyzed when used to date objects that approach an age of 13,000 years. We, therefore, might suggest one good reason why radiocarbon dating, as it is presently used,

apparently leads us to untrustworthy conclusions for very early dating. That reason is that there is evidence that the worldwide C14 reservoir is still increasing. If it is indeed increasing, the whole carbon 14 method of age dating requires re-evaluation, for this could change in substantial fashion the ages derived from this dating method. Moreover, this could also point to a very young earth.

C14 is produced by the action of cosmic ray activity. Thermal neutrons formed by these cosmic rays enter the earth's atmosphere and react with N 14 to form the radioactive isotope of carbon C14. Cosmic rays are formed from energy sources such as the sun, stars, and possibly supernova explosions which occur every 30 years or so.¹⁴ Scientists assume that these energy sources have been around for a long period of time and have probably produced fairly constant cosmic ray activity during the last several tens of thousands of years. Thus, a state of equilibrium should exist so that the carbon 14 reservoir or inventory remains fairly constant. The total new carbon 14 being formed at any moment of time ought to just equal the carbon 14 ceasing to exist because of its half life of 5730 years. Slight variations are to be expected because of sun spot activity, but in general equilibrium should exist.

Equilibrium does not exist, however. Even before 1955, Dr. Willard Libby, the first man who discovered and developed the radiocarbon dating method, records data that suggest this fact. He indicates in his book, *Radiocarbon Dating*, that the "I" value based on the assumed rate of formation of new C14 equals 18.8 disintegrations per minute per gram.¹⁵ His estimates of the actual figure for worldwide distribution of biological materials is about 15.3. Thus, his figures indicate that the amount of carbon 14 disintegrating at any time all over the world appears to be about 81% of the new C14 being formed ($15.3/18.8 = .81$). Other scientists have puzzled over this curious situation and have come to no satisfactory explanation for it. R. L. Lingenfelter writes that there is a strong indication that the present natural production rate of C14 atoms exceeds the natural decay rate by as much as 25%.¹⁶ This is the phenomena that would exist if the Carbon 14 reservoir were about 75% full. The most recent figure for the ratio of the disintegrating rate to that of the rate of formation is about 72%. H. E. Suess writes that the most recent figure for the production rate of new C14 is that of Lingenfelter where the value given is $2.5 + .5$ dps per cm^2 . The decay rate given in the same reference is 108.5 dpm/ cm^2 which equals 1.8 dps per cm^2 . Thus, the

ratio of the decay rate to the production rate is 1.8/ 2.5 or 72%.¹⁷ This indicates that the C14 reservoir is about 72% full.¹⁸

The Radiocarbon Reservoir Is Still Filling

The evidence suggesting the worldwide C14 reservoir or inventory is only partly full is surely strange if cosmic ray activity which produces the C14 is a long term phenomena. A number of possibilities might be suggested.

1. During the past 13,000 years cosmic ray activity was severely reduced causing the C14 reservoir to be depleted. This possibility is rather remote. While there have been short time fluctuations in cosmic ray activity due to sun spots and other solar activity, the sun and stars appear by all the available evidence to have shone with about their present brilliance and energy since the beginning or at least for the last hundreds of thousands of years if the beginning is truly back that far in time.

2. Something is wrong with the values obtained for the C14 production rate and decay rate. This, of course, is always a possibility. However, this all important question has been under examination for more than fifteen years now and analyses have been made by competent scientists. Significantly, the results are always on the side of the decay rate being substantially lower than the production rate. While major error is always a possibility, it does not appear at all probable.

3. A catastrophe occurred within the last 10, 000 years which buried substantial C14. This is a distinct possibility in view of the Biblical account of the flood. We would then expect the C 14 buildup to be resumed after this catastrophe in accordance with the following equation for the production of a radioactive substance:

$$N = \frac{R}{\lambda} (1 - e^{-\lambda T}) \quad (\text{Equation 2})$$

Where R is the rate of formation of active atoms, λN is the disintegration rate, and λ is the characteristic decay constant for the species.¹⁹

4. *Another possibility is that cosmic ray activity did not begin until 13,000 years ago.* The Bible indicates that man was created 11,013 B.C. on the sixth creation day. Since there is much Biblical reason to believe the six days were each 24 hours long and the Bible records that the sun and stars began to shine the fourth day, they also would have an age of about 13,000 years. Since the sun, moon, and stars were visible on the earth, one would logically expect that when God made them to shine upon the earth, He also caused the light and energy-cosmic rays included to fill space and become immediately available to the earth.

This is an interesting possibility. If we explore this a bit we discover that in 13,000 years, beginning from a zero reservoir of C14, the build-up would be such that today the inventory would be 79.4% full. This is found from the equation:

$$D = 100 (1 - e^{-\lambda T}) = (1 - 2^{-T/5730}) \quad (\text{Equation 3})$$

where “D” is the decay rate expressed as a percentage of the formation rate, and “T” equals the time in years since disintegration began or since the beginning of C14 production. The assumption that no C14 was created before the six days is supported by the fact that Genesis 1:2 records that there was darkness over the face of the deep. Light was not brought into being until the first day (Genesis 1:3), which eventually became regulated by the sun, moon, and stars on the fourth day. The darkness suggests a lack of cosmic ray activity even as the presence of the light bearers on the fourth day suggest a full-orbed cosmic ray program from that day forward. Moreover, C14 is not found in the earth’s interior. This in itself is not conclusive, for if the earth is indeed millions of years old, any C14 created at the beginning would have completely disintegrated. But if the earth is 13,000 years old, the absence of C14 in the earth’s interior strongly suggests that C14 was not included as a part of the original creation.

5. *Possibly the true state of affairs is a combination of these last two possibilities.* The production of C14 perhaps began some 13,000 years ago, and a percentage of it was buried by the flood. This is suggested by the relationship of the 79.4% reservoir based on uniform build-up for 13,000 years, as compared with the

actual reservoir size of approximately 72%. Even this is not conclusive, however, and we must look in greater detail at other evidence related to C14 dating to discover more precisely what actually happened.

In any event, the partially filled reservoir that does exist indicates that we may not assume that the specific activity of carbon has been constant in the past, and all C14 ages which cannot be independently checked against other dependable dating methods cannot be assumed to be correct. In general a reservoir that is filling would appear to give dates far older than the true dates if there was constancy in the C12 inventory. Thus, we receive a possible insight into the reason for the existence of C14 dates which are far older than 11,000 B.C. Moreover, we sense a real correlation between the partially filled C14 reservoir of today and the Bible information which points to an earth 13,000 years old. The C14 dating method may be the bridge that will bring the scientific evidence into the Biblical framework.

Thus, we have seen that radiometric dating methods are not at all trustworthy as a means of establishing a timetable for the earth's existence. The necessity of viewing the available evidence in the light of unverifiable assumptions negates any possibility of trustworthy conclusions. The anomalies that are ever present emphasize the tenuous nature of conclusions derived by these dating methods.

Moreover, an examination of the Carbon 14 dating method has not only shown one important reason why ages derived from this dating method are much too old as compared with the true ages shown in the Bible, but it has also shown that this method, if properly used, potentially provides very close agreement with the Bible.

Other dating methods could well be examined, but to do so is beyond the scope of this book. For a further discussion of the question of the unreliability of radioactive dating methods such as uranium-thorium-lead and rubidium-strontium methods, the reader is encouraged to read Chapters 1 to 4 of the book by Melvin A. Cook *"Prehistory and Earth Models"* (London, Max Parrish, 1966), and *"The Genesis Flood"* (Morris and Whitcomb, Presbyterian and Reformed, 1965, pages 333-385).

Let us press on with our study. Can we utilize the dependable characteristics of the carbon 14 evidence together with the absolute truth of the Bible to obtain more information regarding past climatic conditions? In the next chapter, we shall attempt this difficult assignment.

NOTES:

¹ Richard L. Armstrong, "K-Ar Dating of Plutonic and Volcanic Rocks in Orogenic Belts," *Potassium-Argon Dating*, O. A. Schaeffer and J. Zahringer (ed.), Springer-Verlang, New York, Inc., 1966, p. 120.

² *Ibid.*, p. 120.

³ G. H. Curtis, "Problem of Contamination in Obtaining Accurate Dates," *Potassium-Argon Dating*, p. 155.

⁴ David Fisher, *et al.*, "Ages of Pacific Deep Sea Basalts, and Spreading of the Sea Floor," *Science*, June 7, 1968, p. 1106.

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¹¹ Hans E. Suess and Minze Stuiver. "On the Relationship Between Radiocarbon Dates and True Sample Dates," in *Radiocarbon, the American Journal of Science*, Yale University, New Haven, Conn., Vol. 8, 1966, p. 537.

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¹³ Please see Appendix IX for a brief discussion of tree-ring dating as it relates to the Biblical chronology.

¹⁴ V. L. Ginsburg, "The Astrophysics of Cosmic Rays," *Scientific American*, Feb., 1969, p. 61.

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¹⁶ R. E. Lingenfelter, "Production of Carbon 14 by Cosmic-Ray Neutrons," in *Review of Geophysics*, 1963, p. 61.

¹⁷ H. E. Suess, "Secular Variations of the Cosmic-Ray Produced Carbon 14 in the Atmosphere and their Interpretations," in *Journal of Geophysical Research*, Vol. 70, 1965, p. 5946.

¹⁸ Please see Appendix X for a further discussion of Lingenfelter's conclusion in 1970 that the decay-production ratio is close to unity.

¹⁹ Gerhart Friedlander and Joseph W. Kennedy, *Nuclear and Radio Chemistry* (John Wiley & Sons, New York, 1st ed., 2nd printing, 1956), p. 132.

Chapter 13

Can We Reconstruct the Past?

Now that we have begun to understand some of the problems with carbon 14 dating, as well as some of its dependable characteristics, it would be interesting to try to use it as a tool to attempt a reconstruction of the past. In view of the fact that the Bible indicates that the world is about 13,000 years of age, carbon 14 should prove ideal as a help in this effort because 13,000 years is easily within the time span of carbon dating.

To attempt this reconstruction without the Biblical statement, which alone gives an exact timetable, would be exceedingly foolhardy. As we have seen, there is no trustworthy method of checking the errors of carbon 14 dating earlier than written history, but the Bible gives us an absolutely accurate timetable of history. Moreover, it gives some clues concerning such phenomena as the conditions of the world before the flood and the scope and magnitude of the flood. Thus, we have considerable information which is denied the scientist who chooses to rely only on the secular evidence.

It must be admitted, of course, that any reconstruction of the past will be speculative. The world is in the bondage of corruption and much of the available secular evidence is untrustworthy. The Noachian Flood was so catastrophic that normally it would defy any attempt at a reconstruction of history. Nevertheless, we would dare attempt such reconstruction only because of the exquisite reliability of the Biblical record.

In making this attempt we, too, must make some assumptions. These will automatically weaken our conclusions. We shall, however, try to minimize these assumptions so that their effect upon the conclusions is minimal.

To begin our reconstruction, let us try to estimate the carbon dioxide conditions which prevailed just prior to the flood and immediately following the flood. In the measure we are able to do this,

we will be able to estimate climate conditions of the past. This in turn should offer clues regarding such phenomenon as the ice age and fossil evidence of past tropical conditions.

We saw in Chapter 12 that the average rate of decay of C14 all over the world was about 72% of the rate of formation. This appears to indicate that the worldwide inventory or reservoir of C14 in the atmosphere, biosphere, and oceans is still increasing or filling. We learned that the formula for the increase is:

$$D = 100 (1 - e^{-1T}) = 100 (1 - 2^{-T/5730}) \quad \text{Equation 3}$$

where “D” is the decay rate expressed as a percentage of the formation rate, and “T” equals the time in years since disintegration began or since the beginning of C14 production. Equation 3, therefore, tells us the present rate of C14 net increase all over the world as well as the increase during the past several thousand years if production of C14 was constant during this period, and if none of the C14 was lost in any way except through disintegration. This equation, therefore, could give us the size of the C14 inventory at a hypothetical point 7,000 years ago when the flood occurred. We must call this a hypothetical point because the flood would have produced such catastrophic changes that violent readjustment would have taken place for possibly a millennium following the flood.

Let us draw the curve of Equation 3 to see what happens at 4989 B.C., the date when the flood had subsided. We are aware that this curve cannot be considered to be absolutely precise. During this 7,000 year period there could have been short time fluctuations in C14 production. Also, some C14 would have been taken out of the available reservoir by the development, for example, of peat bogs and sedimentary rock. On the other hand, some C14 which had previously been buried, would have been freed by the action of weathering, by the burning of peat, and by other natural activity. In any case, the quantities of C14 added or removed by these activities probably are very small compared with the production rate of new C14. Since the 72% figure for the present size of the C14 reservoir is an approximation, we can fairly assume that the reservoir has been building up at a constant rate in accordance with Equation 3 to its present approximate 72% quantity. The curve for this build-up is plotted in Figure 1 (Curve B).

Examining a point on the curve where $T = 4989$ B.C., we discover that $D = 35\%$. At that time in history the C14 reservoir must have been 35% full in order to build up to its 72% level today. Since, as we saw in Chapter 12, the production rate of C14 is 2.5 dps/cm² of the earth's surface, the C14 decay rate immediately following the flood was thus $35\% \times 2.5$ dps/cm² which equals 0.875 dps/cm² or 52.5 dpm/cm². (Even as the decay rate today is 72% of 2.5 dps or 1.8 dps/cm².)

Now that we have estimated the C14 inventory immediately following the flood, let us proceed to estimate the C12 situation from the flood to the present time. To do this we must first estimate the specific activity "I" of carbon for the period. C12 is a function of both C14 and "I" in accord with the equation,

$$I = \frac{C14}{C12} ,$$

where C14 is the decay rate at any moment in time and C12 is the quantity of C12 available at the same moment.

We can obtain "I" by analyzing C14 dates of specimens and comparing these with the true dates. Presently radio carbon dates are determined assuming that "I" has been constant from the time the specimen died until its age was measured. Therefore, any specimens whose C14 age equals their true age, as determined by other reliable dating methods, must have died when the worldwide "I" equaled the worldwide "I" today. On the other hand, if the C14 age of a specimen is older or younger than its true age, then "I" at the time of death was smaller or greater than it was when the specimen was analyzed.

In examining many thousands of specimens, scientists have discovered that from about 250 B.C. to the present, the radio carbon dates agree very closely with the true ages. Thus, we can know that "I" for this period of time has been relatively constant. Therefore, we can know that C12 for this period of time was proportionate to the C14 inventory. We have already seen that C14 has been increasing in accordance with Equation 3. Therefore, for the same period C12 must have been increasing at the same rate, in view of the constant "I" for this period. The cube of this increase is plotted in Figure 2 (cube D).

When we look at the period from the flood to 250 B.C., the evidence is not quite as helpful. This is due to the fact that we cannot

Figure 1

know the exact relationship between the true ages and the radiocarbon ages for this entire period. However, scientists have been able to compare the true age of specimens with the C14 age back to about 3000 B.C. The true age is available through archaeological and tree ring data. They have discovered that earlier than 250 B.C. the true age of a specimen relates to the radiocarbon age by the formula:

$$T = 1.4R - 1100 \text{ (Equation 1)}$$

where R is the radiocarbon age and T is the true age. While this must be considered to be approximate, it is in the right direction and will help us to reconstruct the past within broad limits.

While Equation 1 appears to be true back to about 3000 B.C., we have no way of knowing if it holds all the way back to the flood. It is valid to assume, however, that whatever phenomenon produced the relationship encompassed by the equation probably was in large part a result of the flood. This is suggested by the utter magnitude and character of the flood as compared with any later phenomena that involved the whole earth, the continental division of 3100 B.C. notwithstanding. (We will discuss this division in greater detail in the next chapter.) It is also suggested by the secular evidence. There is no obvious nonconformity or discontinuity in Carbon 14 dating until we go back to the time of the flood. As we shall see later, a whole host of evidence is available to show a serious discontinuity about the time of the flood.

Since we know the flood occurred 4990-4989 B.C. or 6940 years ago (using 1950 A.D. in our calculations), we can estimate the radiocarbon age of a specimen that died at that time by equation 1 as follows:

$$6940 = 1.4 R - 1100; R = 5740 \text{ years}$$

Therefore the carbon 14 age would be 5740 years, although its true age is 6940 years. With this knowledge we can estimate the specific activity "I" that existed immediately following the flood.

For any specimen that dies, the ratio of the C14 to the C12 atoms which we call the specific activity "I", is related to time by the formula:

Figure 2

$$I_p = I_d e^{-T/5730} \text{ (Equation 4)}$$

Where:

T = true age of the specimen

I_d = specific activity in the year the specimen died

I_p = specific activity of the dead specimen today.

Let us now examine a specimen which gives a radiocarbon age of 5740 years. Since its age of 5740 years is determined by assuming the I_d , the worldwide specific activity at its death, was equal to that which exists today we can calculate the I_p which exists in the dead specimen today.

Let us first calculate the present specific activity of carbon. It can be determined from the known C14 decay rate and the present quantity of C12 atoms. Lingenfelter gives the following figures for the present size of the C12 inventory or reservoir (carbon available in the atmosphere-biosphere-hydrosphere for the carbon cycle).

Table III

Ocean	Grams/cm ² of earth's surface
Inorganic	7.56
Organic	0.64
Sediment	0.30
Land	0.16
Air	<u>0.13</u>
	8.79(See Fig. 2, Curve D)

Additionally, he indicates, as we saw in the previous chapter, that the present C14 disintegration rate is 108.5 dpm/cm². Therefore the present value of I is:

$$\frac{108.5 \text{ dpm/cm}^2}{8.79 \text{ gm/cm}} = 12.3 \text{ dpm/gm}$$

The figure 12.3 dpm/gm, therefore, is the specific activity that existed in the world 5740 years ago, if “I” had been constant during this period. Thus, the specimen that shows Carbon 14 date of 5740 years would now have a specific activity of:

$$2^{\frac{12.3}{5740/5730}} = 6.15 \text{ dpm/gm}$$

Previously we had shown that a specimen that shows a C14 age of 5740 years is actually 6940 years of age. Since we know its present I_p to be 6.15 dpm/gm we can now calculate the I_q at a point 6940 years ago when the specimen actually died. This equals 6.15 ($2^{6940/5730} = 14.2$ dpm/cm. This then is the “I” that existed in the world at a hypothetical point 6940 years ago immediately following the flood.

We are now able to estimate the C12 inventory immediately following the flood. We had previously calculated that the C14 decay rate at the time of the flood was 52.5 dpm/cm². Since C12 = C14/I, the C12 we are looking for equals

$$\frac{52.5 \text{ dpm/cm}^2}{14.4 \text{ dpm/gm}} = 3.7 \text{ gm/cm}^2 .$$

We now have calculated that immediately after the flood, the following was the approximate situation as far as the carbon reservoir was concerned.

Average C12 content of oceans, atmosphere, and biosphere, 3.7 gm/c² (Curve D, Fig. 2).

Average C14 decay rate all over the world 52.5 dpm/cm² (Curve B, Fig. 1).

Specific activity of carbon 14.2 dpm/gm (Curve C, Fig. 2).

Let us now establish the carbon situation before the flood. The period 11,013 B.C. to 4990 B.C. will concern us.

Before The Flood

Of the three unknowns, C14, C12, and specific activity “I,” the easiest to estimate is C14. Since the reservoir was at zero at 11,013 B.C., and built up in accordance with Equation 3 (Chap. 12), by the

year 4990 B.C., the reservoir should have been 51.8% full (Fig. 1, Curve A). Actually, it probably was somewhat less than this because of the carbon 14 that was buried in peat bogs and CaCO_3 buildup as sedimentary rock. We shall see later why this is so. We arbitrarily will guess that this reduced the carbon 14 reservoir by about 10% so that at 5000 B.C. it would have been 51.8-5.2 or 46.6% full (Fig. 1, Curve B). Whether this reduction was actually 10% or as much as 25% or as little as 5% will not seriously alter the general conclusions derived from this discussion.

We have no way of determining the size of the C12 reservoir before the flood at 4990 B.C. but we do have some clues as far as the specific activity of carbon is concerned for about the time just before the flood. As scientists have studied the carbon 14 dating evidence, a great amount of attention is focused on a period about ten to fifteen years ago. The meat from woolly mammoths found frozen by the thousands in Siberia gives a carbon data of a bit older than 10,000 years.¹ A series of samples of inorganic carbonate show dates of from 10 to 15 thousand years ago, thus indicating high carbonate precipitation about that time in history. We read, for example, in *Radiocarbons*, about the results of a series of cores that were studied from the Red Sea floor and which give dates of 8875 to 10,675 B.C. The remarks are interesting.

Samples at depth of 70 cm, 40 cm, and 50 cm give absolute age for onset of unusual conditions which lead to precipitation of submitted 'hard crust' in Red Sea. This is the first instance that cemented calcareous rocks have been cored from ocean bottom. It is expected that precipitation of CaCO_3 took place at the end of the last glacial period as a result of temperature increase and temporary separation of basin 'from Indian Ocean.'²

We shall determine as we continue our study how these unusual conditions were probably a result of the flood.

In another series of tests a great many samples of inorganic carbonate were studied to determine the age of freshwater inorganic carbonate deposits. Uncorrected ages of the samples showed ages of 20,000 to 37,000 years.

Corrected C14 ages show that major carbonate accumulation occurred 10,000-15,000 years ago. . . . In any case, corrected ages more closely approximate true age of 'young' organic carbonate than any ages of same material determined by the C14 method thus far.³

These examples are given to indicate that in the period 10,000 to 15,000 years ago, as determined by radiocarbon, there was especially great activity of carbonate deposition. Another series of dates relate to this same period. Standard Oil Co. initiated a project dealing with the nature of organic matter in marine sediments. They report:

One of the surprising results of this study has been the discovery of liquid hydrocarbons in recent sediments from the Gulf of Mexico. Celephatic and aromatic hydrocarbons have been identified in ten recent marine sediment samples from four different locations in Texas and Louisiana, in which specimens representing near shore or off-shore locations . . . were included. Depths of these sediments ranged from a few inches up to a hundred feet below the water floor... . If one were to extrapolate the data obtained on a 106 foot core of sediments taken from the floor of the Gulf of Mexico 7 miles off Grande Isle, a cubic mile of these sediments would contain 4,500,000 barrels of a paraffinathene, aromatic, and asphaltic mixture resembling crude oil Ages of 11,800 - 14,600 \pm 1400 years were obtained for the hydrocarbons extracted from several sections of the Grande Isle core of recent sediments. A composite carbonate sample from the entire core proved to be 12,300 \pm 1200 years old.⁴

Moreover, a date of about 10,000 B.C. is assigned to the end of the last great glacier periods known as the Wisconsin and the Allerod. Frederick Johnson writes:

In 1951 Flint compared the Allerod horizon in Germany, England, and Ireland, dated about 8850 B.C., with the two Greeks horizon, dated about 9450 B.C.; he concluded that the essential agreement of the dates implies that deglaciation of Northern Europe was contemporary with that of North America.⁵

Interesting, too, is the dearth of radiocarbon dates that are found to be older than 15,000 years. John D. Milliman and K. O. Emery, for example, write that of eighty radiocarbon dates used in determining past sea levels, only fifteen show older than 15,000 years.⁶

Excess carbonate deposition, oil deposits, the death of thousands of animals by some unknown means, all point to a drastic phenomenon about 10,000 to 15,000 radiocarbon years ago. Surely, an unusual amount of change took place in the world about that time. Could this have been related to the flood? It certainly appears so.

Since the awesome, earth-shattering flood of Noah's day actually did happen about seven thousand years ago (4990 B.C.) according to Biblical reckoning, we expect to see evidence in the secular record of this world-wide catastrophe. The examples we have just cited, and a great many more which could be offered, do indeed show that about 10,000 to 15,000 radiocarbon years ago tremendous changes occurred in the earth. I believe we are on safe ground to assume that these completely unusual, out-of-the-ordinary, unexplainable conditions can be only the results of the Noachian Flood.

With this in view let us continue our reconstruction by selecting an average date of 12,000 radiocarbon years before the present as the date of the flood. Use of a figure a few thousand years older or younger should not significantly change the results of this reconstruction.

Using a flood date of 12,000 years B.P. (before present) will give us the tool that we need to discover the "I" or specific activity of carbon that existed in the world just prior to the flood. Once we know "I" at that point in history we can calculate the carbon available to the carbon cycle just prior to the flood. With that in hand we will be able to see the impact of the flood upon the world as we compare these figures with those we have previously calculated to be true just after the flood. The radiocarbon date of 12,000 B.P. is, of course, based upon the assumption that the specific activity "I" has been constant through the ages. Since we have already seen the "I" value has not been constant and since we know the true date of the flood (4990 B.C.), we can determine the "I" that probably existed just before the flood. A specimen that now shows an age of 12,000 years must have an "I" at present of:

$$I(\text{present}) = I(12,000 \text{ yrs. B.P.}) \times \text{—————} =$$

$$12.3 \times \text{—————} = 2.84 \text{ dpm/gm}^2.$$

Since the specimen now shows an "I" of 2.84, its "I" at 4990 B.C. which is 6940 B.P., should have been:

$$2.84 = I(4990 \text{ B.C.}) \times \text{—————} ;$$

$$I(4990 \text{ B.C.}) = 6.6 \text{ dpm/gm.}$$

Therefore, the “I” which existed immediately before the flood, I (4990 B.C.) equaled 6.6 dpm/gm (Fig. 2, Curve C).

We now have estimated the specific activity occurring just before the flood to be about 6.6. Since we previously estimated the C12 reservoir to be 46.6% full, the C14 value should have been 46.6% x 2.5 dps/cm² or 1.16 dps/cm = 69.6 dpm/cm² (Fig. 2, Curve B). The carbon reservoir should then have been

C14

I (4990 B.C.)

which equals 69.6/6.6 or 10.5 grams/cm² (Fig. 2, Curve D).

We have now determined the following:

	Immediately Before Flood (4990 B.C.)	Immediately After Flood
Average C14 decay rate all over world	69.6 dpm/cm ² (Fig. 1, Curve B)	52.5 dpm/cm ² (Fig. 1, Curve B)
Average C12 content of oceans, atmosphere, and biosphere	10.5 gm/cm ² (Fig. 2, Curve D)	3.7 gm/cm ² (Fig. 2, Curve D)
I (specific activity of carbon)	6.6 (Fig. 2, Curve C)	14.2 (Fig. 2, Curve C)

The Flood Depleted the C14 Reservoir

A serious problem has now arisen. If the C12 content of the world before the flood was about 10.5 grams/cm² and after the flood only 3.7 grams/cm² as we previously calculated, what happened to the rest of it? Obviously, the balance of it was buried by the flood of Noah’s day. It was taken out of the reservoir by becoming coal, oil, and sedimentary rock. Additionally, some of it was covered by the glaciers that spread over the world.

If that is true, would a like percentage of the C14 have been taken out of the C14 reservoir? If this is so, since C12 was reduced from 10.5 grams to 3.7 grams, the C14 reservoir which approximated 69.6 dpm/cm² before the flood should have been proportionately reduced to about 24.5 dpm/cm² after the flood (Figure 1). This is in serious conflict with the figure 52.5 dpm/cm² which we previously calculated as the post-flood condition. How can we account for this discrepancy?

Again the Bible comes to the rescue. The Bible indicates that a great quantity of new water was provided as a result of the flood, and we can show that at least some of this water surely contained much C14. In Genesis 7:11 we read that the fountains of the deep opened up as did the windows of heaven. Thus, God teaches that the flood was produced by waters overflowing from the bowels of the earth and waters from the heavens. Biblical statements show that such water would have been available.

We read in the creation account that God began with water. Genesis 1:6-8 declares:

And God said, Let there be a firmament in the midst of the waters, and let it divide the waters from the waters. And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament: and it was so. And God called the firmament Heaven. And the evening and the morning were the second day.

The Bible then declares that the waters under the heaven were gathered into one place and the dry land appeared (verse 9). This account informs us that there are waters above the heavens as well as waters from which the earth was formed. This information is supported by other Bible references. In connection with statements that outline the creation of the heavens and the earth, we read in Psalm 136:6:

To him that stretched out the earth above the waters: for his mercy endureth for ever.

We read in Psalm 148:4:

Praise him, ye heavens of heavens, and ye waters that be above the heavens.

These verses together with the Genesis creation account agree entirely with the statement of Genesis 7:11 that God opened the fountains of the deep and the windows of heaven. Surely God is

teaching that there is water under the heavens as well as far out in deep space. Only the idea of water in deep space appears to satisfy the Biblical teaching of waters above the heavens.

The concept of waters under the heaven from which the earth came forth or upon which the earth was spread is readily seen by the secular evidence. It is seen in the oceans as well as in the waters under the continents and oceans which exist as underground rivers, lakes, and seas. Also, it is seen in the fact that so much of the continents are composed of sedimentary, that is, water-formed, rock.

It is seen in the waters that are expelled during volcanic action. We know that the opening of the fountains of the deep, on a large scale, would have been equivalent to the new waters that are produced by the activity of volcanoes. The evidence of the rupturing of the ocean floors can be seen in dramatic fashion in the great volcanic rifts that exist on the floors of the oceans. We will discuss these sea floor rifts in greater detail in the next chapter.

The existence of active volcanoes gives us some clues as to what we might expect in the way of new C14 being available to the earth when the fountains of the deep were opened during the flood. Water from the fountains of the deep in all probability would have been very similar to present volcanic action since both phenomena produce water from the depths of the earth. An examination of such water shows that it contains some C12 but no significant C14. This is because such water would never have been in contact with cosmic rays which are required for the production of C14. While the Biblical statement (that the fountains of the deep opened up to make available considerable new water to assist in the inundation of the earth), is supported by much secular evidence, such new water would have produced little or no new C14. Therefore, our earlier conclusion that sufficient new C14 was added as a result of the flood to change the available C14 from a theoretical post-flood quantity of 24.5 dpm/cm² to a calculated actual 52.5 dpm/cm² is not assisted by the knowledge of new water from the depths of the earth.

When we consider the possibility of water from deep space we have another situation altogether. It be shown that it was available as the Biblical record teaches, and it can be shown that it probably contained considerable new C14. Let us examine the question of deep space water in greater detail. In so doing, we will discover answers to the questions relative to the huge quantities of new water necessary to

account for a flood that covered the highest mountain to a depth of 15 cubits.

Water from Deep Space

Heretofore, scientists who have tried to understand the Genesis 7 account, that it rained such great quantities of water for forty days that even the mountains were covered, have contended that the Genesis account was an absurdity. They contended that if all the moisture in the atmosphere could be precipitated, the entire earth would be covered by only a few inches of water, even if we assumed a saturated atmosphere. This, of course, is true. But the Bible does not say that the windows of heaven meant the atmosphere. Could it not mean deep space beyond the exosphere? It could, as we shall see.

For some time scientists have been aware that the hydroxide ion OH is present in outer space. This knowledge alone assures us that the raw materials required for inundating the earth exist in deep space. Also, scientists have discovered huge clouds of water in outer space. This was reported by a team from the University of California in *Science*, March 7, 1969. They report:

Radio spectral line radiation of water molecules at a wave length of 1.35 centimeters have been measured from eight sources in the galaxy. The sources are less than 7 arc-minutes in diameter, have extremely high brightness, temperatures, and show many spectral features. . . . Seven of the eight H₂O line emission sources which have been observed agree in position with known OH emission sources within the accuracy of measurement.⁷

They add that the apparent size of these H₂O clouds are less than 10¹⁶ cm (80 billion miles) in size. Therefore, today we have evidence of huge water clouds in deep space.

Thus, we can easily assume that God in His perfect planning caused the earth to go through just such a water storm so that for forty days and nights water poured upon the entire surface of the earth simultaneously. The windows of heaven were indeed opened.

(See Appendix V for additional discussion on deep space water.)

C14 from Deep Space

Did this water contain C14 and if it did, can we reasonably conclude that there was sufficient new C14 provided by this means to

double the C14 reservoir? In fact, if new C14 was provided by this means, some of it would have mixed with the CO₂ in the earth and would have been buried with the C12 and C14 that was here before the flood. Thus, we must anticipate new C14 in a quantity no less than that which would have produced an additional 25-30 dpm/cm² of radiation.

The question of the possibility of C14 being present in the deep space water is readily answered. C14 is produced by the action of cosmic ray neutrons, and scientists have discovered cosmic rays everywhere in space. V. L. Ginzburg writes:

During the past 15 years however, we have come to recognize that the cosmic rays are indeed a weighty and energetic factor, ranking with the stars as a principal component of the cosmos. In these few years we have learned that cosmic rays are truly a universal phenomenon, not only present throughout the space of the solar system of our galaxy and of the other galaxies, but also associated with the life processes of the stars, with supernova explosions, with radio galaxies and with quasars.⁸

The presence of C14 in deep space is abundantly shown by the presence of C14 in some of the meteorites. T. P. Kohman and P. S. Goel write:

Techniques have been developed for the isolation and measurement of cosmogenic C14 in meteorites.⁹

We thus see clearly that carbon 14 is present in deep space. We may then assume that the water storms of outer space would also contain much C14. Thus, our conclusions that (1) the flood resulted in part from tremendous quantities of new water being poured forth from the Biblical windows of heaven, and that (2) sufficient amounts of new C14 to produce 25-30 dpm/cm² of radiation were provided by this new water is clearly possible and indeed is altogether probable in the light of the secular evidence.

How Much Water Inundated the Earth?

We should now estimate the amount of deep space water that was deposited on the earth during the flood. This question requires a bit more analysis. We shall begin by setting forth the present water-continent quantities that exist. From Sverdrup we obtain the following facts.¹⁰

Area of earth's surface	$5.1 \times 10^{18} \text{ cm}^2$
Area of oceans including adjacent seas	$3.61 \times 10^{18} \text{ cm}^2 = 70.8\%$ of earth's surface
Area of all land	$1.49 \times 10^{18} \text{ cm}^2 = 29.2\%$ of earth's surface
Average depth of oceans	3795 meters
Average height of sub-airial crust (continents)	840 meters
Volume of all oceans	$1370 \times 10^6 \text{ km}^3$

Turning now to the Bible, we read the following interesting news in Psalm 104:6-9:

Thou didst cover it with the deep as with a garment; the waters stood above the mountains. At thy rebuke they fled; at the sound of thy thunder they took to flight. The mountains rose, the valleys sank down to the place which thou didst appoint for them. Thou didst set a bound which they should not pass, so that they might not again cover the earth.

This psalm must be talking about a phenomena which took place after the Noachian Flood, for it reads, "Thou didst set a bound which they should not pass, so that they might not again cover the earth." The significant word "again" indicates that the flood must have occurred already for it surely was an event in which the oceans covered the earth without restriction. This psalm, therefore, gives us the exceedingly helpful information that following the flood there was a deepening of the ocean basins and a rising of the mountains.

From this we may assume that prior to the flood the ocean basins were somewhat more shallow than at present and that during and following the flood there was considerable mountain building. Therefore, we can be assured the waters of the flood did not cover the earth at a depth required to cover the present high mountains.

But the Bible says the mountains were covered. Genesis 7:19 says "All the high mountains that were under the whole heavens were covered." We know, therefore, that mountains did exist before the flood and sufficient new water was added to cover these mountains.

Let us attempt to determine how high these mountains were.

Presently, the continents have an average elevation of 840 meters above sea level. Since the pre-flood mountains were lower than the mountains of today, the average continental height before the flood must have been somewhere between zero and 840 meters high. Yet there were mountains and they must have been considerably higher than sea level. However, since the mountains were much lower than at present, the average continental height must have been considerably less than 840 meters. Let us assume the average continental height before the flood was 340 meters. (A figure 100 meters higher or lower would not substantially change the conclusions of this discussion.) If the highest pre-flood mountain in the pre-flood continent was only about 1000 meters, the new water required to cover this mountain amounted to about $460 \times 10^6 \text{ km}^3$. If it was as high as 2000 meters, the new water would have been about $970 \times 10^6 \text{ km}^3$.

It seems extremely unlikely that the pre-flood mountains were higher than 2000 meters. To cover mountains of such a height would have required so much new water that the pre-flood oceans would have been only about 30% their present volume. On the other hand, we would not reasonably expect the pre-flood mountains to be much less than 1000 meters (3270 ft.). This is especially so in the light of Genesis 7:19 where the phrase "high mountains" is used. Therefore, we may speculate that the highest pre-flood mountains were perhaps between 1000 and 2000 meters and the volume of the pre-flood ocean, including waters from the depths of the earth, was somewhere between $400 \times 10^6 \text{ km}^3$ and $910 \times 10^6 \text{ km}^3$. For the sake of this discussion we will use a figure about midway between these figures, assuming that about $685 \times 10^6 \text{ km}^3$ of water were added from deep space during the flood. The highest pre-flood mountain was then about 1450 meters high (4750 ft.). Any other set of pre-flood conditions within the limits assumed in this discussion can be estimated but will not substantially change the conclusions offered in this study.

This huge amount of water from deep space which could have doubled the ocean volumes (present volume $1370 \times 10^6 \text{ km}^3$) must have contained C14 in an amount which, when added to the C14 already on the earth, would have provided about 52.5 dpm/cm² of radiation after the flood. There probably was more C14 than this because some of the new C14 would have been buried by the flood action.

Thus far in our study we have seen that the pre-flood world contained oceans possibly one half the size of our present oceans, the C12 content approximated 10.5 grams/cm², and the C14 reservoir had built up so that it showed a disintegration rate of about 69.9 dpm/cm². Water equal to the amount of the pre-flood ocean was dumped on the earth in forty days, which brought large quantities of new C14. The geological action that resulted from the flood buried as much as 65% of the pre-flood C12 together with like amounts of C14. The end of the flood saw a world with C12 reduced to about 3.7 grams/cm² and the C14 reservoir reduced so that it produced a decay rate of about 52.5 dpm x cm².

Hopefully, we have produced a reasonable reconstruction of the carbon situation that existed in the past. With this information we should be able to estimate past climatic conditions because a definite relationship exists between the carbon in the atmosphere (principally CO₂) and world-wide temperatures. Moreover, the amount of CO₂ in the atmosphere is a function of the carbon available in the carbon cycle. Once we know something about past climate conditions, we shall see the reason for such ancient phenomenon as a heavily vegetated earth followed by extensive glaciations over almost a third of the earth's surface. Thus, we shall receive some additional insight into the cause of the phenomenon which is in evidence about 10,000 to 15,000 radio carbon years ago.

Pre-Flood Climate

Let us now examine the conditions that existed in the pre-flood world as far as climate was concerned. Previously, we noticed the following distribution of C12 or CO₂, in the carbon cycle:

C12 per cm² of Earth's Surface

7.56 grams in the ocean as inorganic carbon

0.64 grams in the ocean as organic carbon

0.3 grams in the ocean as sediment

0.16 grams in the land

0.13 grams in the atmosphere

8.79

Apparently an equilibrium exists between the carbon in the oceans, atmosphere, and biosphere or land, with a total amount in the world of about 8.8 grams/cm² on the earth's surface. What possibly could have been the equilibrium situation before the flood when there was on the order of only one-half as much ocean volume and when the C12 content amounted to something like 10.5 gram/cm² all over the world? Let us first determine equilibrium conditions for the earth today, assuming that the ocean was reduced by one-half in volume. If the atmosphere had 0.13 grams, and the land 0.16 grams, we would expect the amount in the ocean to be one-half of the figures for our present full ocean. The figures would look like this:

	Ocean Present Volume	Ocean One-half Than Under Present Conditions
Oceans		
Inorganic	7.56 gr/cm ²	3.78 gr/cm ²
Organic	0.64 gr/cm ²	0.32 gr/cm ²
Sediment	0.3 gr/cm ²	0.15 gr/cm ²
Land	0.16 gr/cm ²	0.16 gr/cm ²
Atmosphere	0.13 gr/cm ²	0.13 gr/cm ²
	<hr/> 8.79 gr/cm ²	<hr/> 4.54 gr/cm ²

Let us change one other condition. The land areas presently cover 29.2% of the world. Let us assume today's conditions of CO₂ concentrations, but let us assume that in addition to the oceans being one half in volume, the land is increased so that it covers about 40% of the earth's surface. (If we assumed the land area was unchanged from what it is today, the conclusions offered in this discussion would be fundamentally unchanged.) We shall see later why we have added to the continental areas. Equilibrium of CO₂ or C12 could then be expected to be approximately as follows:

<u>Oceans</u>	<u>Ocean Present Volume</u>
Inorganic	3.73 gr/cm ²
Organic	0.32 gr/cm ²
Sediment	0.15 gr/cm ²
<u>Land</u>	
0.16 x —————	= 0.22 gr/cm ²
<u>Atmosphere</u>	<u>0.13 gr/cm²</u>
	4.54 gr/cm ²

What would we obtain if the total available C12 were 10.5 gram/cm² instead of 4.54%? We shall assume the land and atmosphere would increase at the same rate so that if the atmospheric carbon were doubled, the carbon in the biosphere or land (plants, etc.) would also be doubled. We shall also assume the inorganic carbon in the oceans would increase at the same rate as the organic ocean carbon and the ocean sediment carbon. Thirdly, we shall assume the ocean carbon increased in proportion to the square root of the increase in the land and atmospheric carbon. This is based upon the conclusion of Gilbert Plass¹¹ who estimates that if the carbon dioxide content in the oceans was doubled, the content in the atmosphere would probably be quadrupled. We cannot know how correct these assumptions are, but they at least should be in the right direction and of the right order of magnitude. The following would result.

Oceans

Inorganic	3.73 times x =	? gr/cm ²
Organic	0.31 times x =	? gr/cm ²
Sediment	<u>0.15</u> times x =	? gr/cm ²
	4.19	

Land

$$0.22 \text{ times } x^2 = ? \text{ gr/cm}^2$$

Atmosphere

$$\frac{0.13 \text{ times } x^2 = ? \text{ gr/cm}^2}{0.35 \quad 10.5 \text{ gr/cm}^2}$$

To solve for x we have then the equation:

$$0.35 x^2 + 4.19 x = 10.5$$

Solving this we get $x = 2.13$, and $x^2 = 4.5$.

The distribution of the carbon cycle before the time of the flood would thus have been:

Oceans

Inorganic	3.73 times 2.13 =	7.94 gr/cm ²
Organic	0.31 times 2.13 =	0.66 gr/cm ²
Sediment	0.15 times 2.13 =	0.30 gr/cm ²

Land

$$0.22 \text{ times } 4.54 = 1.00 \text{ gr/cm}^2$$

Atmosphere

$$0.13 \text{ times } 4.54 = \underline{0.59} \text{ gr/cm}^2$$

$$10.49 \text{ gr/cm}^2$$

The important change is in the atmospheric carbon. We see that the carbon dioxide of the pre-flood atmosphere was perhaps at least four times more concentrated than it is today (0.59 as compared with 0.13). Plass suggests that calculations show that if the carbon dioxide were decreased by 50%, the average temperature would have been decreased by 6.9° F.¹² A rise of 400% in CO₂ should then give us reason to believe that the pre-flood world was some ten to fifteen degrees warmer than today. The earth being this much warmer along with a high CO₂ concentration would have been ideal for development of the heavy growth of plant life all over the world that is actually shown by the fossil record.

Plass writes¹³ that the earth's climate was warmer during most of geological time; presumably the atmosphere then contained a much higher percentage of carbon dioxide. His conclusion is adequately supported by our CO₂ calculations.

Post-Flood Climate

Let us now examine the carbon equilibrium after the flood as it existed in the oceans, biosphere, and atmosphere. While equilibrium might not have come for hundreds of years after the flood, we can establish a theoretic condition immediately after the flood, inasmuch as we have some idea of the impact of the flood on carbon availability. As we saw earlier in our study, the carbon inventory plunged from an average amount of 10.5 g/cm² over the entire surface of the earth to an average amount of 3.7 gr/cm² after the flood.

In making our calculation we must realize that as a result of the flood, the oceans were increased to a volume equal to today. Moreover, the continental areas were probably somewhat reduced in size due to the areas of land which became the continental shelves and slopes of our present earth.

Ocean

Inorganic	7.56 times	x = ? gm/cm ²
Organic	0.65 times	x = ? gm/cm ²
Sediment	<u>0.30</u> times	x = ? gm/cm ²
	8.51	
Land	0.16 times	x = ? gm/cm ²
Atmosphere	<u>0.13</u> times	x = ? gm/cm ²
	0.29	3.7

Thus, the gross continental area approximated that of today. Therefore, we assume today's conditions of carbon residency in arriving at the post-flood situation.

Thus, ... $29x^2 + 8.51x = 3.7$, and $x = 0.43$ while $x^2 = 0.18$. Thus, the following obtains for the post-flood situation.

Oceans	$8.51 \times 0.43 =$	3.66 gm/cm ² of the earth's surface
Land	$0.16 \times 0.18 =$	0.03 gm/cm ² of the earth's surface
Atmosphere	$0.13 \times 0.18 =$	<u>0.03</u> gm/cm ² of the earth's surface
		3.72 gm/cm ² of the earth's surface

Again the important fact to note is the great change in the atmosphere carbon. We see that immediately following the flood, the average carbon dioxide content of the atmosphere was about one-fourth of what it is today, or about 5% to 6% of what it was before the flood. Thus, we may conclude that the average world temperature was ten to fifteen degrees F. colder than today or from twenty to thirty degrees F. colder than before the flood. No wonder extensive glaciation was introduced by the flood. Plass records:

Calculations show that a 50% decrease in the amount of carbon dioxide in the air will lower the average temperature of the earth 6.9° F. We can be reasonably sure that such a sharp drop in temperature would cause glaciers to spread across the earth.¹⁴

Obviously a drop of 20° to 30° would have multiplied the potential for extensive glaciation to occur. Moreover, there must have been extremely severe oscillations of temperatures in the world following the flood as mountain building occurred and as equilibrium was again established. This could easily have given rise to some of the evidence that results in the common belief that there have been several periods of glaciation during the earth's history.

The Glacial Epoch

Thus far we have calculated that the world before the flood was 10° to 15° F. warmer than today. We have also seen that the flood caused a worldwide temperature reduction of 20° to 30° F. so that the average temperature became a 10° to 15° F. colder than today. Now the intriguing question must be asked: Is secular evidence available that shows that the world was this much colder in the past? The answer

to this question is affirmative if we examine the evidence relating to the glacial epoch or ice age.

Scientists today have noted that the continents are covered by glacial ice to an extent of 10.4% of the earth's surface. In the past the ice cover was much more extensive inasmuch as evidence shows that some 28% of the continents were covered. At the height of the ice age the more extensive glaciation must have existed in a world that was substantially colder than today. Estimates of the lowering of the world's temperatures during the ice age have been made by a number of scientists. The *Encyclopaedia Britannica* describes the making of one such estimate and indicates that a temperature drop of 7-8° C (12.4-14.4° F) was characteristic of the ice age. There we read:

At the height of the glacial ages at least 28% of the land area of the world was covered by glacier ice. At present more than 10% is so covered. But during the inter-glacial ages and in pre-glacial time, apparently very little if any glacier ice existed. Thus, the present day has somewhat less the aspects of a non-glacial climate than the inter-glacial ages. It is therefore desirable to compare the climates of the glacial ages with non-glacial climates as well as with present-day climates.

Glacial cirques (theatre-like valley heads fashioned by the action of snow fields at the heads of individual glaciers in mountainous terrain), bear a rough general relation to the snow line or lower limit of perennial snow. Through measurements of the altitudes of cirques in many parts of the world the approximate position of the snow line at the height of the latest glacial age has been determined. Wherever measured, the former snow line is lower than the snow line of today, at the equator as well as in polar latitudes.

In order to determine the glacial-age climate of a coastal point A, point B on the same coast is located by finding the place where the present snow line has the same altitude as the glacial-age snow line of A. The present climate of B is then taken as representative of the former climate of A. The method is rough, but over a wide region it gives consistent results. Coastal points such as A are seen to have received much greater precipitation than now, and to have had mean annual temperatures of the order of 7° C. to 8° C. lower than now, whereas in interior regions the increase in precipitation and decrease in temperature, compared with present conditions, were less pronounced. In other words, the sub-polar climate belts were shifted

toward the equator during the glacial ages. This shift may have amounted to as much as 15° of latitude.

The pluvial conditions of the dry regions of middle and low latitudes support this conclusion in that they appear to show equatorward shifting of the middle-latitude belts of rain-bringing cyclonic storms. The evidence of fossil animals in the northern hemisphere likewise indicates southward shifting of the cold northern climatic zone through many degrees of latitude.

On the other hand, the evidence of fossil plants and animals indicates that during the inter-glacial ages the climatic zones were shifted toward the poles, and that more than once these zones, in the northern hemisphere at least, have been pushed north of the positions they occupy at present. It is generally believed, though it has not been conclusively proved, that these climatic shifts were synchronous throughout the world. In summary, the climatic changes were worldwide and apparently contemporaneous; the climatic belts were shifted alternately, equator-ward and pole-ward; and changes in mean annual temperatures amounted to several degrees centigrade.¹⁵

Table VI. Lowering of Temperature During the Ice Age

Climatic Evidence	Pleistocene Lowering of Temperature (°C)	Author
Dryasotopcetala in Central Europe	6-10°	Gagel, Range, Werth
Picea glavic and P. Mariana in Texas	8° in July	Potzger, Tharp
Picea and Abies in Florida	7-8° in July	Davis
Frost fissures in Central Germany	11°	Soergel
Frost fissures in Montana	8°	Schafer
Depression of snowline in the Alps	6°	Penck
Depression of snowline in Colorado	5.5°	Anteus

Others have worked on this question and they too have given quantitative determinations of temperature lowering during the ice age. Some examples are set forth by Nairn.¹⁶

The significant fact to note is that the *Encyclopaedia Britannica* suggests a temperature drop at the height of the ice age of 7-8° C which equals 12.4-14.4° F. Furthermore, the temperature drops estimated by other scientists range from 5° C to 11° C. This equals 9.9° F -19.8° F. Note that these temperature differentials agree precisely with a post-flood temperature that was 10° F -15° F colder than today, which we concluded must be the situation based on the carbon inventories. Thus, we are greatly encouraged that the calculations of this chapter have merit.

Secular scientists talk about an ice age that continued on and off for one million years. They speak, too, of inter-glacial periods when there were warm spells. When we realize, however, that one million years is recent compared with the four and a half billion years they believe the earth has existed, we see that they, too, are acknowledging that, relatively speaking, the ice age is very recent. Moreover, since the Bible establishes the earth's age as some 13,000 years, any other time periods suggested by secular scientists must be recognized to be erroneous. All evidence must be evaluated within the much narrower compass of 13,000 years rather than millions or billions of years.

To put it another way, once we realize that the ice age could have been induced only by the flood about 7000 years ago, then we know that the ebb and flow of the ice sheets would have been of tens or at most hundreds of years in duration. Thus, so-called inter-glacial periods become insignificant in the whole phenomenon. In fact, some of the phenomena commonly associated with warmer inter-glacial periods probably are to be associated instead with the warmer pre-flood world.

We might note, too, that our calculation of the world-wide average temperature before the flood agrees with the ice-age phenomena. At the ice age maximum, 28% of the continents were covered by ice. Since the ice age maximum, the world has warmed 10-20° F., and today over 10.4% of the continents are ice covered. Thus, we conclude, as an approximate generalization, that the world without an ice cap would possibly be warmer in proportion to the size of the ice cover. This proportion would point to a pre-flood, pre-ice age temperature that was 6-12° F. warmer than today. This obviously is a comparatively unreliable basis for making a temperature estimate,

but it does offer a guideline. We are encouraged that the conclusion of the study set forth in this chapter, that the pre-flood world was 10-15° warmer than today, is entirely in agreement with this guideline.

Carbon Cycle Changes

While there is evidence of temperature differentials in the past which agree with the conclusions of this study, other questions might fairly be raised. Does a figure of 3.7 gr/cm² over the earth's surface for the carbon in the carbon cycle immediately after the flood make sense? Where would the carbon have come from to build up to its present estimated volume of 8.8 gr/cm²? Are the 7000 years since the flood of sufficient duration to permit this build-up?

To answer these questions we should go back to creation. We discover from the Bible that the earth was formed out of the water and by means of water. We read in II Peter 3:5-6:

For this they willingly are ignorant of, that by the word of God the heavens were of old, and the earth standing out of the water and in the water: Whereby the world that then was, being overflowed with water, perished.

This suggests that in the day God created the dry land the foundation rocks of the earth were covered by sedimentary rock and soil.

Interestingly Dr. Cook argues for the conclusion that certain sedimentary rocks were present from the very beginning. He declares:¹⁷

These arguments seem, therefore, to show that the limestone and dolomite precipitates have always been present in the crust of the earth, being most likely precipitated in the relatively very brief period (Jeffreys, p. 959), of solidification of the crust during which thermal equilibrium was being established in and near the earth's surface under the present solar radiation-density environment.

The above (solubility and occurrence) requirement that the carbon in calcite and dolomite precipitates had to be present as such, and in practically the same amounts, throughout the entire history of the (solid) earth poses a difficult restriction apparently not even seriously considered previously.

This sedimentary rock and soil, of course, contained no C14, for that is a product of cosmic ray activity which could not have begun before creation. The sedimentary rock and soil of creation did however contain vast quantities of carbon. Estimates of the present volume of this carbon range from 1800 gr/cm² over the earth's surface to 5000 gr/cm².¹⁸ In addition there is the carbon in the carbon cycle which we estimated to be about 10.5 gr/cm² before the flood and which is found in the vegetation, atmosphere, and ocean solution.

As already noted, in the post-flood world, a large part of the continent (an estimated 28.4%) was covered by glacier ice because of the flood. Thus, considerable carbon was covered which ordinarily would have been available to the carbon cycle. Additionally, large quantities of carbon were buried and became coal and oil fields. Moreover, the oceans were severely diluted of available carbon because of the new water from deep space. The carbon available to the carbon cycle therefore was reduced to the approximate 3.7 gr/cm² we have estimated.

Following the flood we would expect a substantial build-up of available carbon to the carbon cycle, especially from two areas. The first would be land erosion, and the second the uncovering of land shielded by glaciers. Any soils that had not been solidified into sedimentary rock by the action of the flood would have provided comparatively large sources of carbon. Since the ocean had been depleted of carbon by the dilution of the flood, much of this carbon provided by land erosion would have been available for ocean solution. In fact, many sediments were no doubt in suspension in the ocean water following the flood, and by the end of several hundred years would have entered the carbon cycle. As carbon from these extensive sediments became a part of the ocean solution, in time it would have added to the atmospheric carbon. Thus, warming of the earth would have occurred. This warming would have hastened glacial melting, which would have opened up substantial land areas, thus uncovering additional carbon to the carbon cycle.

It is possible from the secular evidence to show that an increase from an average of 3.7 gr/cm² of carbon in the carbon cycle in 4990 B.C. to 8.8 gr/cm² at the present time is quite realistic.

Dr. Plass estimates that during the last hundred years there has been an annual increase of 7.9×10^9 tons of CO₂ in the CO₂ reservoir.¹⁹ This is due chiefly to the burning of fossil fuels and the release of carbon from the soil. If we calculate the annual increase that would be

required to increase carbon from 3.7 gr/cm^2 to 8.8 gr/cm^2 during a period of 7000 years, we obtain an average annual increase of CO_2 of 14.8×10^9 tons per year. This figure is a bit higher than the Plass estimate of 7.9×10^9 tons presently added annually, but it is of the same order. The higher figure surely reflects the heavy release of carbon from the soil during the period immediately following the flood.

As an additional check on our study let us calculate the carbon increase during the past 2250 years. We are able to estimate the annual increase of carbon to the carbon cycle during this period because of our knowledge of the carbon 14 to carbon 12 ratio that existed during this period.

As we saw earlier in this study, the ratio which we called the specific activity "I" has been relatively constant during the past 2250 years. Since we know the rate of increase of C14 during this time span (see Figure 1, Curve B), the rate of C12 increase would have been approximately identical. Calculating this increase of C12 gives us a figure of about 1 gr/cm^2 increase during the last 2250 years. This increase calls for an annual increase of about 11.9×10^9 tons CO_2 as compared with the Plass estimate of 7.9×10^9 tons annual increase at the present time. This calculation again serves to indicate the reasonableness of the calculations set forth in this volume.

Summary

In this chapter we have stepped forth boldly to attempt a reconstruction of the climates of the past going all the way back to the beginning. Because certain facts are available to us which are denied others who do not accept the Bible as absolutely trustworthy, we hopefully have been able to make this reconstruction in a much more accurate fashion than any heretofore attempted. With the certain knowledge of such Biblical facts as the date of creation, the existence of deep space waters, the date and certainty of the flood of Noah's day, the fact that much water was added to the earth during the flood, the scope and severity of the flood, and as a result of the flood the mountains were thrust up and the ocean basins were deepened, we were able to make computations that otherwise would have been impossible. The secular evidence of deep space water, deep space C14, ocean floor rifts, past temperature differentials as demonstrated by the ice age, and the lack of equilibrium in the C14 inventory all have served to further support the inerrant Biblical statement.

In any study of the past all facts are not known and some estimates must be made. By carefully making estimates which are in agreement with the known facts as far as quality is concerned and which are not sensitive in regards to precise quantities, we believe we have remained on solid ground in this study. Such estimates as the height of the pre-flood mountains, the selection of C14 date which points to sufficient worldwide catastrophe that we can relate it to the flood, and the relationship of CO₂ content to climate are some of the estimates which were integrated into known facts to obtain our conclusions.

Our conclusions that the pre-flood world was 15° to 20° F. warmer than the world today, and that the world temperature plunged downward 20°-30° F. as a result of the flood, are supported by the secular evidence of great ice sheets that covered the earth in the past. The secular conclusion that at the height of the ice age the worldwide temperature was 10°-20° F. colder than today gave further support to the conclusions resulting from this study.

We are quite aware that the conclusions of this chapter are somewhat speculative compared with information discussed in our earlier chapters. But we do believe this study will help to see the possibility of obtaining the most satisfactory reconstruction of the past only if the Bible data is considered.

In the next chapter, we want to look at the phenomena of ocean floor spreading and continental drift.

NOTES

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⁶ John D. Milliman and K. O. Emery, "Sea Levels During the Past 36,000 Years," *Science*, Dec. 6, 1968, p. 1121.

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¹¹ Gilbert N. Plass, "Carbon Dioxide and the Climate," *Scientific American*, July, 1959, p. 44.

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¹⁷ Melvin A. Cook, *Prehistory and Earth Models*, London, Max Parrish, 1966, p. 205.

¹⁸ G. P. Kuiper, *The Atmosphere of the Earth and Plants*, University of Chicago Press, 1954, Chapters 6 and 8.

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Chapter 14

The Earth was Divided

(Genesis 10:25)

In a previous chapter, we saw that the oceans present a great threat to the scientists' conclusion that the world is billions of years old. This is as it should be; the idea of this kind of age for the earth is completely without Biblical basis. Without regard for the Bible's clear teaching that this world is in the bondage of decay, scientists are determined to reconstruct, if at all possible, the geological and paleontological sequences of history. This is a difficult task even with Biblical help; and without help from the Bible, it is virtually impossible. The effects of the bondage of corruption (floods, fire, earthquakes, pestilence, etc.), have confused and thoroughly fragmented the natural record so that one wonders if any kind of satisfactory evidence can be forthcoming.

Man has successfully discovered many of the immutable laws by which God governs the universe. These discoveries have enabled him to achieve many scientific breakthroughs. New materials, medicines, surgical techniques, communication methods, and stratospheric explorations are all a result of man's discovery of God's laws of nature. Because man has been able to send a man to the moon, he has proven his ability to know the various concepts involved in such an undertaking. He must be given full credit for a job well done. He could be expected to succeed in his rocket trip because he is simply utilizing mechanisms that operate in accordance with the very precise laws that God has established.

These accomplishments have made men bold to believe that a like application of effort and intelligent research should enable man to turn the clock back to the beginning, and thus help him to understand the present and anticipate the future. So, scientists have courageously set forth in their search. Even though they must guess and speculate and assume as they view the available evidence, they are not afraid to draw conclusions, tentative though they may be. The rest of mankind

(too often Christians included), because they worship science, without question eagerly adopt each and every scientific conclusion.

Man continues to pour millions, even billions, of dollars into earth research and space exploration, and one can almost predict that he will develop more and more evidence to show that the Bible is correct. This will not cause natural man to believe the Bible. He probably will simply note that the ancients who wrote the Bible had some good ideas. The added testimony which attests to the accuracy and trustworthiness of the Bible will surely stand in judgment against man if he continues to deny the Lord of the Bible.

Back to the Oceans

Nevertheless, we must look briefly at other phenomena presently being considered by scientists, that is, the phenomena of ocean floor spreading and continental drift. These, too, are without satisfactory explanation apart from the Biblical testimony. Let us look briefly at the available evidence and the scientists' conclusions concerning this evidence, and then we will look at the evidence in the light of the Bible.

Increasingly in recent years scientists are discovering that the ocean floor is quite different from that which they had expected. Rather than an ocean floor covered by the accumulations of sediments deposited during eons of continental weathering, they have found it to be relatively bare of sediments. This paucity of ocean floor sediments has puzzled scientists, as we saw in a previous chapter.

Scientists now believe they have found a possible answer to the strange lack of ocean floor sediments. They believe that it is possible that the ocean floor is renewed every 100 million years or so. They believe that this is accomplished by the ocean floor moving under the continents at a rate of 2 to 10 centimeters per year; the ocean floor moves away from mid-ocean ridges and acting as a huge plate, slides under the continents at the edge of the ocean; and the sediments are swept clear as the ocean floor slides under the continent. Not only is the ocean floor apparently moving but the continents appear to be moving. As they move, they slide over the ocean floor, driving the sediment on the ocean floor deep in the earth. Scientists are presently earnestly studying evidence that gives rise to the conclusions of ocean floor spreading and continental drift. The scarcity of ocean floor sediments is part of the evidence that suggests these conclusions.

The floor of the ocean contains other evidence. Careful study of the ocean floor has revealed that in each ocean there are great ridges constructed by extreme volcanic activity. Karl K. Turekian writes:

The major oceanic ridge systems form a series of connected topographically high areas present in all oceans. Ridges are between 1000 to 4000 kilometers above the ocean floor at points protruding from the sea surface as islands. The term 'mid-oceanic ridge' has sometimes been used for the system, after the most prominent example, the mid-Atlantic ridges. The topography is representative of a composite of volcanic and rupture features, called faults. At the center of the mid-Atlantic ridge, for example, there is a discontinuous 'rift valley' characterized by heavy earthquake activity and higher than average heat flow. A series of transverse trenches that offset the axis of the ridge is also prominent . . . the ridges appear to be continuous around the earth, except for offsetting by breaks. They are a major feature of the ocean basins; coupled in some way to the location of the continents.¹

The discovery of parallel magnetic bands on either side of these ridges has helped to foster the thought that the ocean floor is spreading away from these ridges toward the continents. Because, as igneous rocks solidify and cool, they are magnetized to match the earth's magnetic direction existing at the time of such solidification, it is possible to determine the earth's magnetic situation in the past. As ocean floor lavas on either side of the oceanic ridges were measured for their magnetic sign, it was discovered that the sign of the remnant magnetic field alternated in bands parallel to the ridge. This has led scientists to believe that there must be some kind of a spreading action that is taking place on the ocean floor. As new lavas pour forth from the ridges they solidify with the magnetic sign of the earth at that time. As they pour out on the ocean floor, the existing ocean floor is pushed away from the ridges and toward the continents. O. W. Scholl writes:

The general spreading model stipulates that pebogenic sediments are swept against the continental block, along with down-welling oceanic crust, and are either added to or stuffed beneath the continental crust.²

The assumption of ocean floor spreading as related to remnant magnetic fields is discussed in an article in "Science Magazine":

Additional information about reversals is provided by the magnetic anomalies over the mid-ocean ridges. These anomalies are produced by igneous rocks which become magnetized as they solidify and cool in a narrow zone along the ridge axis. As new material forms, the previously magnetized material spreads to either side. If the rate of spreading is the same on both sides on the ridge, the result is a bilaterally symmetrical pattern of normally and reversely magnetized strips with widths proportional to the lengths of the corresponding polarity intervals. The magnetic anomalies do not in themselves determine an independent reversal time scale for reversals, the profiles provide a nearly continuous record of polarity intervals.³

The timetable of this spreading action is quite recent by geological standards which speaks of millions and billions of years. John and Maurice Ewing write:

Dividing the half-width of the thin sediment strip by the magnetic anomaly pattern gives a date of approximately 10 million years ago for the discontinuity in all areas, whether the spreading rate has been fast or slow. Thus it appears that the initiation of the spreading cycle occurred in many parts of the world at the same time.⁴

A timetable of less than ten million years is further suggested by Enrico Bonatti, who writes:

A basalt pavement outcrops almost continuously in a band along the crestal region of the East Pacific Rise. . . . The lavas are fresh "oceanic tholeiites" which were emplaced less than one million years ago by fissure eruptions.⁵

Thus, the assumption of ocean floor spreading is one theory that has been set forth to account for the relatively thin sediments found on the ocean floor. Karl V. Turekian writes:

The ocean floor sediments are transported under the continents as the result of ocean floor spreading. This explanation is particularly attractive in light of the recent interpretation of magnetic anomalies in the deep ocean.⁶

John and Maurice Ewing address the question by suggesting that this spreading has produced the thin sediments.

The suggestion was made that the spreading that has produced the thin sediments on the crest is relatively recent and that it has been

preceded by a long period of quiescence during which the flank sediments had accumulated.⁷

The spreading of the sea floor is suggested as the reason for the relatively deep sediments which are found along the continents. J. Tujo Wilson makes reference to this:

Most geologists who have studied the broad problems of the earth have been puzzled by the behavior of continental margins. In all parts of the world near coasts, sedimentary deposits are found which appear to have been derived from places where there is now deep ocean, and these deposits, with others from the continental side, seem to have been pushed on to the continents forming marginal mountains and adding to the area of the continents.⁸

The theory of ocean floor spreading is not without many problems. Scientists are surprised that there is so little evidence of ocean floor buckling, a condition that would be expected if the crust of the ocean floor were being pushed away from the ridges and toward the continents. L. Knopoff writes:

Over large parts of the sea floor, generally remote from the median ridges, deep sedimentary basins show little evidence of buckling or warping.⁹

The lack of evidence to suggest the ocean floor is spreading against the continents is seen elsewhere also. The Peru-Chile Trench, for example, located in the Pacific Ocean along South America shows no evidence of this kind of spreading action. O. W. Scholl, *et al.*, write:

None of the expected stratigraphic and structural effects of a spreading sea floor have been imposed on the sedimentary fill of the Peru-Chile Trench. During the last several million years, and perhaps during much of the Cenozoic, the trench has not been affected by an oceanic crust thrusting under the continent.¹⁰

The age correlation of ocean bottom crust being progressively older as related to the mid-ocean ridges is not satisfactory either. Although potassium-argon dating leaves much to be desired, as was shown in a preceding chapter, it is the one dating method presently employed to attempt to determine ocean floor ages.

David Fisher, *et al.*, write:

K-Ar determinations of age from whole rock samples of tholeiitic basalts dredged from the crest of the East Pacific Rise and from the flanks of three seamounts of varying distances from the crest,

show that the crest is younger than one million years and that age does not correlate with distance from the crest.¹¹

One other phenomenon is receiving great attention by scientists and may be related in some manner to the evidence which suggests to scientists that the ocean floor is spreading. The phenomenon is the possibility of continental drift. For some time, it has been noticed that the configuration of the North and South American continental shoreline rather closely matched that of Europe and Africa. It almost appears as if at some time in the past they were one continent and that it split apart, and the separate parts or continents drifted to their present positions with the Atlantic Ocean between them. Similarly, at one time the continental areas of Australia and Antarctica appear to have been a part of the other continents. Moreover, a very interesting discovery was made by Maurice Ewing in 1949 during a National Geographic Society study of the Atlantic Ocean floor. He writes:

Some of the things we found on this second cruise create new scientific puzzles. One was the discovery of prehistoric beach sand in two core samples of the bottom, brought up in one case from a depth of two and in the other nearly three and one-half miles far from any place where beaches exist today. One of these sand deposits is 1200 miles from land.¹²

This discovery further substantiates the idea of continental drift. Further detailed studies of the fit of continents to each other revealed the following:

The eastern hemisphere and the western hemisphere do fit remarkably well around the edge of the Atlantic. The quality of the fit is sufficiently good that the result can hardly be coincidental. The result obtained by Bullard, et al. (1965), requires that Europe and Africa be rotated relative to each other and that North and South America be rotated relative to each other before the fit be made. The eastward protrusion of South America neatly fits the Gulf of Guinea; the overall match of the margins of Africa and South America have a root mean square misfit at the 500 fathom contour of 0.93° . This is less than 2% of the total rotation of the two continents which is about 570° .¹³

It has also been noted that the medium ridge of the Atlantic Ocean approximately bisects the margins on either side. The enormous symmetry of the mid-Atlantic ridge relative to the two continental margins and the remarkable fit of the two continental margins to each other is singular indeed.

L. Knopoff discusses the idea that, in his judgment, the rifting or spreading of the primordial continent began some 150 to 170 million years ago and has proceeded at a rate of about 3 cm. per year. He indicates that paleomagnetic evidence further substantiates continental drift. According to this evidence either the pole of rotation of the earth has wandered over the earth or there has been continental drift which would have changed the direction of the magnetic poles.

Many problems arise, of course, relative to the theory of continental drift. We will comment on two of the problems. The first is that the paleomagnetic evidence appears to indicate polar migration before the continental break-up.¹⁴ The other is that no evidence is forthcoming at the present time that shows movement of the continents relative to each other. This is partly due to the difficulty of making the precise measurements required to show a drift of a few centimeters per year if such is indeed taking place. Scientists estimate that with present methods it will take thirty to fifty years to detect and measure such drift.¹⁵

We have set forth very briefly some of the questions facing scientists relative to the ocean floor. From the foregoing we could make a few observations.

1. Except along the continental edges where there is a thickening of sediments, the ocean floor has very thin deposits of sediments. This comes as a great surprise and puzzle to scientists who, in view of their opinion that the earth is very old, logically expect very thick deposits.
2. In the middle of the ocean floor huge rifts are in evidence which indicate great volcanic action in the past or some kind of an up-welling of the ocean floor in these areas.
3. On either side of these mid-oceans rifts are parallel magnetic bands that indicate past reversals of the earth's magnetic field.
4. An examination of the continental edges of North and South America, compared with those of Europe and Africa, indicates that at one time these continents were joined together as one large continent.
5. The theory presently in vogue to account for the phenomena described above is two-fold. First, the ocean floor is slipping under the continents, thus burying the ocean sediments under the

continental masses. Second, the continents are moving away from each other and accentuating this ocean floor stripping and burying activity. These theories are held although there is little evidence of buckling or warping at the continental edge, which would seem to be required if the theories were correct. Moreover, there is no measurable movement of either the ocean floors or the continents. Thus, it would appear that these theories are at best, exceedingly speculative.

The Bible Answers

When we go to the Bible we can begin to make sense of all of the questions and observations presented in this chapter. We saw in a previous chapter that an analysis of the ocean water and ocean floor accords exceedingly well with the Biblical date of 11,013 B.C. What about the question of continental division? Does the Bible have anything to say about this?

Indeed the Bible does have something to say. In Genesis 10:25 we find an extremely intriguing statement:

And unto Eber were born two sons: the name of one was Peleg; for in his days was the earth divided; and his brother's name was Joktan.

As if to make certain that this important though strange piece of information, which seems so out of place in the Biblical record, would not be lost or overlooked, it is repeated in I Chronicles 1:19.

What can the Bible mean by the declaration that in Peleg's day the earth was divided? We saw in an earlier chapter that Peleg lived from 3153 B.C. to 2914 B.C. We decided at that time that the division in Peleg's day was a reference to the Tower of Babel when God confused the language to force men to fill the earth. Do you recall that one of the clay tablets spoke of the collapse of an ancient ziggurat (ancient temple tower), which occurred simultaneously with a confusion of language? We quoted a paragraph from Stephen Gaiger who wrote *Bible and Spade*:

George Smith also quotes a remarkable fragment relating to the collapse of such a ziggurat. "The building of this temple offended the gods. In a night they threw down what had been built. They scattered them abroad, and made strange their speech. The progress they impeded."¹⁶

The truth suggested by the fragment, that an earth-shattering event occurred which scattered peoples, is reinforced by the phenomenon that about 3000 B.C. there was a marked change in the way bricks were formed. The new method of forming brick continued for several hundred years. As we saw in Chapter 6, this remarkable archaeological evidence strongly indicates that some drastic event occurred about 3000 B.C. to occasion such a change in a major building material, particularly when the bricks made before 3000 B.C. were more convenient and sensible to use than those made after this date.

All of these pieces of evidence can be coordinated with the evidence of continental division if we realize simply that during Peleg's day the continent was divided and probably at the same time the languages were confused. By understanding the fact that this division did take place about 5000 years ago, we are able to see the precise agreement that exists between the secular and sacred records. Additionally, we shall see that it gives us an insight into the difficult question of how animals and man are found on continental masses, separated by thousands of miles of ocean. We will look at this question in the next chapter as we outline the past, beginning at the very beginning.

NOTES

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⁴ John & Maurice Ewing, "Sediment Distribution on the Mid-Ocean Ridges with Respect to Spreading of the Sea Floor," *Science*, June 23, 1967, p. 1591.

⁵ Enrico Bonatti, "Fissure Basalts and Ocean Floor Spreading on the East Pacific Rise," *Science*, Aug. 30, 1968, p. 886.

⁶ Karl K. Turekian, *Oceans*, p. 113.

⁷ John & Maurice Ewing, *Science*, p. 1590.

⁸ J. Tujo Wilson, "Theories of Building Continents," *The Earth's Mantle*, Gaskell (ed.), p. 459.

⁹ L. Knopoff, "The Upper Mantle of the Earth," *Science*, Mar. 21, 1969, p. 1278.

¹⁰ O. W. Scholl, "Spreading of the Ocean Floor," p. 865.

¹¹ David Fisher, *et al.*, "Ages of Pacific Deep-Sea Basalts & Spreading of the Sea Floor," *Science*, June 7, 1968, p. 1106.

¹² Maurice Ewing, "New Discoveries on the Mid-Atlantic Ridge," *National Geographic*, Nov., 1949, pp. 612-613.

¹³ L. Knopoff, "Thermal Convection in the Earth's Mantle," *The Earth's Mantle*, T. Gaskell (ed.), London and New York, Academic Press, 1967, p. 171.

¹⁴ L. Knopoff, *Thermal Convection*, pp. 173-175.

¹⁵ Wm. Markowitz & B. Guinot, *Continental Drift, Secular Motion of the Pole and Rotation of the Earth*, Dr. Reidel Publishing Co. Dodrecht, Holland, 1968, p.7

¹⁶ Stephen L. Gaiger, *Bible and Spade*, Oxford University Press, 1936, p. 29.

Chapter 15

Ancient History

Thus far in this volume we have examined a number of pieces of scientific information in the light of the Bible. We have seen that there is marvelous correlation between the sacred and secular records (there must be, once the secular record is properly understood).

Let us now try briefly to reconstruct earth's history from the beginning, looking especially at the aspects of truth we have already discussed. We are greatly helped in doing this by the absolutely trustworthy chronology the Bible offers as well as by many other statements which are part of the sacred record.

In The Beginning

The belief in the fact of the creation of the universe 13,000 years ago in six days, each day of 24 hours' duration, appears quite naive to say the least. And yet God has given us the calendars in Genesis 5 and 11 to assure us that the year 11,013 B.C. is the beginning. The secular evidence of C14 information and ocean sediments does not violate the Biblical time-table but actually reinforces it, as we saw in previous chapters. The Bible reinforces the Genesis six-day creation account by stating in Exodus 20:11:

For in six days Jehovah made Heaven and earth, the sea, and all that in them is, and rested the seventh day: wherefore Jehovah blessed the sabbath day, and hallowed it.

And we read in Exodus 31:17:

It is a sign between me and the children of Israel for ever: for in six days the LORD made heaven and earth, and on the seventh day he rested, and was refreshed.

Thus, we can be reassured that all of the events recorded in the opening chapter of Genesis are included in this six-day period.

Looking briefly at the six days of creation, we can see the unfolding of God's program. Genesis 1:1 states:

In the beginning God created the heavens and the earth.

This statement is a declaration that God is the creator and that He constructed the universe at the beginning of time. This truth is reemphasized throughout the Bible. For example, we read in Isaiah 42:5:

Thus saith God the LORD, he that created the heavens, and stretched them out; he that spread forth the earth, and that which cometh out of it; he that giveth breath unto the people upon it, and spirit to them that walk therein.

Verse two of the Bible gives us the first step in the formation of the universe. On the first day God brought into being the raw materials that were to become the stars and the planets. Genesis 1:2 declares:

And the earth was without form, and void; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters.

"The earth was without form, and void" means it was in a state of emptiness and chaos. This suggests that when the elements, the "stuff" of the universe, were first created, they were in a gaseous unresolved form. The universe was unable to support life and was unavailable for any known useful purpose. This initial step was transitional in God's creative activity, as suggested by Isaiah 45:18:

For thus saith the LORD that created the heavens; God himself that formed the earth and made it; he hath established it, he created it not in vain, he formed it to be inhabited: I am the LORD; and there is none else.

The Hebrew word for "in vain" is *toho*, which is the same word used in Genesis 1:2 where it is translated "without form." Thus, the Bible appears to indicate that while the earth did exist for a time in chaos, the final purpose of God was to create earth for habitation.

Verse two of Genesis then states that "darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters." This is a surprising statement because "God is light." Even though God is a Spirit and under no circumstance is to be considered material substance, it is significant that God's appearance is often characterized by brilliant light. We think of God's glory in the

presence of Moses on Mount Sinai and of Jesus on the Mount of Transfiguration. In the new heavens and the new earth, we read in Revelation 21:23:

And the city had no need of the sun, neither of the moon, to shine in it: for the glory of God did lighten it, and the Lamb is the light thereof.

Thus, it would appear that God was required to create darkness, even as He says in Isaiah 45:7, “I form light and create darkness.” The presence of darkness together with the Spirit of God seems quite incompatible. This in turn might offer a clue as to why scientists have been unable to discover the true nature of light. They can use light, they know how it manifests itself, but they do not know what it is. The fact that the Bible speaks of darkness being created suggests that darkness is more than just the absence of light. Does darkness of itself have some substance? Is this suggested by the plague of darkness over Egypt, a darkness that could be “felt”? In Exodus 10:21, Jehovah said to Moses:

And the LORD said unto Moses, Stretch out thine hand toward heaven, that there may be darkness over the land of Egypt, even darkness which may be felt.

Verse two of Genesis 1 goes on to declare that the Spirit of God moved or brooded on the face of the waters. This beautifully emphasizes the activity of the Godhead in creation. While other Scriptures underscore the activity of Christ and the Father in creation, this verse shows that the Holy Spirit was intimately involved from the very beginning with the drama that was to take place in time in this universe.

We were surprised to find the reference to darkness in the second verse, but it is also rather surprising to see the emphasis on water in relationship to creation. I do not know the full implication of this, but we read in II Peter 3:5:

For this they willingly are ignorant of, that by the word of God the heavens were of old, and the earth standing out of the water and in the water.

As we saw in an earlier chapter, this suggests that although creation was accomplished in six 24-hour steps, sedimentary rock, that is, rock formed from water-borne sediment, was present from the beginning as part of the earth’s crust. That this is so is amply borne out by the vast amount of sedimentary rock which shows no relationship

whatsoever to the flood, that is, it has no C14 content, which indicates it was laid down prior to the beginning of cosmic activity, and it contains no fossils, which could only have resulted from the flood.¹

In any case, before day one drew to a close, God performed one more mighty creative act. God said, “let there be light.” As we have already noted, the precise nature of light is a mystery. Obviously it is not dependent upon light bearers such as the sun or stars because they were not made until the fourth day. God is the Creator, and already on the first day God established a 24-hour rhythm of night and day.

The second day was the division of the waters that had been brought into being the first day. These gigantic, unformed, gaseous, semi-liquid clouds were divided so that deep space called firmament or heaven was produced. Discoveries by contemporary scientists show that these huge water clouds still exist in deep space.

The third day was focused on the waters that would become the scene of the formation of earth. They were gathered together and the dry land came into being under God’s creation program. It was then that the universe first experienced living organisms because the Bible declares in Genesis 1:11:

And God said, Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after his kind, whose seed is in itself, upon the earth: and it was so.

The earth had become ready to supply food for animals and man who would be created the sixth day.

On the fourth day, God focused His attention on the universe. Until this time there was light but no light bearers. The earth was a complete planet but the balance of the universe still consisted only of the huge water clouds that had been separated from the water from which the dry land of the earth emerged. On this day God made the sun, the moon, and the stars.

These light bearers took their responsible positions in continuing the 24-hour rhythm of day and night which was established by God on the previous three days. Moreover, they became the sources of the light which had been created by God the first day.

One important truth suggests itself at the moment. As small as planet earth is in comparison with the universe, this planet has the pre-eminence in the universe. The sun, moon, and stars have only a supporting role. The fact that the universe is billions upon billions of

times greater in size than the earth does not diminish its pre-eminence. We have an infinite Creator, and it is no more difficult for Him to create a universe than it is for Him to create life or any other part of creation. The apparent endless expanse of the universe, which is held together by immutable God-given laws, gives us a deeper insight into the magnificence, majesty, omnipotence, and omniscience of the Creator. The earth is the scene of the manifestation of God's love, grace, wrath, and justice.

Once we understand the pre-eminence of the earth, we can begin to understand why the Bible declares, in connection with Christ's second coming, that the stars will begin to fall from heaven (Matt. 24:29), and why "the heaven departed as a scroll when it is rolled together; and every mountain and island were moved out of their places" (Revelation 6:14). Infinite God's treatment of the universe at Christ's return is no more a problem to God than it would be for man to empty a bucket of water. In other words, the size, complexity, and nature of the universe is relative. To us the universe appears infinite, and surely it must have a life duration commensurate with its size and complexity, but for God it is merely another item created as part of God's program of redemption. The timetable for the universe is the same as that of the earth.

Since the earth was created about 13,000 years ago, in the year 11,013 B.C., the universe must have been created in the year 11,013 B.C. also. Moreover, the end of the universe is simultaneous with that of the earth. Revelation 21:1 declares:

And I saw a new heaven and a new earth: for the first heaven and the first earth were passed away; and there was no more sea.

Perhaps the reference to seas being no more underscores the renewal of the universe in every aspect because the creation began with water. The new heaven and new earth are created new, as compared with the old universe, as our resurrected spiritual bodies are new as compared with our present bodies. Note the additional references to this grand truth in II Peter 3:7:

But the heavens and the earth, which are now, by the same word are kept in store, reserved unto fire against the day of judgment and perdition of ungodly men.

We read in II Peter 3:10-13:

But the day of the Lord will come as a thief in the night; in the which the heavens shall pass away with a great noise, and the

elements shall melt with fervent heat, the earth also and the works that are therein shall be burned up. Seeing then that all these things shall be dissolved, what manner of persons ought ye to be in all holy conversation and godliness, Looking for and hasting unto the coming of the day of God, wherein the heavens being on fire shall be dissolved, and the elements shall melt with fervent heat? Nevertheless we, according to his promise, look for new heavens and a new earth, wherein dwelleth righteousness.

Isaiah 65:17 tells us:

For, behold, I create new heavens and a new earth: and the former shall not be remembered, nor come into mind.

Returning to the creation of the light bodies on the fourth day, we should not be frustrated by questions such as the earth receiving light from light bearers located billions of light years in space. At the moment God created the light bearers, He unquestionably also brought the light to earth. Therefore, we should not look for clues regarding the age of the universe from phenomena such as the speed of light.

Moreover, we should not expect the chemical composition of the moon or the other planets necessarily to be the same as that of our earth. They were a creative activity distinctly separate from that of the earth. This has been shown by moon exploration. Scientists have discovered that a wide difference exists between the chemical composition of the earth and the chemical composition of the moon.

A portion of the deep space water that was separated on the second creative day from that from which the earth emerged could have been utilized by God in creating the universe. Or it is possible that this water continued in deep space as scientific evidence presently shows. We might recall that this is the source of most of the water that deluged the earth in the awful flood of Noah's day. (See Chapter 13.)

On the fifth day, God created the fish and the birds. The earth was now about prepared for the crown of God's creation, man.

On the sixth day, God continued his creative acts by bringing into being the animals. Then as the final creative act in the six days of creation, He created man in the image and to the glory of God. God saw everything He had made, and behold, it was very good.

One is struck by the introduction of Christ to man. In His first act of power, at Cana of Galilee at a marriage feast, He displayed Himself

as Almighty Creator. There He turned the water into wine, huge quantities of wine, in an act of instantaneous creation. There is none of the element carbon in water, but carbon is required in wine. Where did it come from? Christ, of course, created it and showed and proved conclusively that He is Creator. Do the six jars point to the six days of creation? He again powerfully displayed Himself as Creator when He multiplied the loaves and the fish in the presence of the thousands who ate. This is Christ who formed and created instantaneously during the six days of Genesis 1 (John 1:3, Hebrews 1:2).

From Adam to the Flood

We will continue our reconstruction by examining the 6023-year period from Adam to the flood.

We may suppose that when God created the earth, He created one large continent with the balance of the surface of this planet covered by oceans. In Genesis 1:9-10 we read:

And God said, Let the waters under the heaven be gathered together unto one place, and let the dry land appear: and it was so. And God called the dry land Earth; and the gathering together of the waters called he Seas: and God saw that it was good.

This language would surely permit a one-continent concept and there appears to be no language elsewhere in Scripture which would prohibit this interpretation. The continental area could have been larger than the presently existing continental areas. As seen in a previous chapter, the volume of the seas possibly could have been on the order of one half as large as they are today. The submarine canyons found on the ocean floor, the continental shelves which occupy a global area of about 7% of that of the oceans, and the finding of continental beach sand in mid-Atlantic, all point to the possibility of a large continent that occupied a greater area of the earth's surface than the sum of all the continents today. However, the size of this great continent is not germane in a critical way to our discussion. Whatever the size, the land masses of today could have existed as one continent at the beginning. This is suggested by secular evidence and is permitted by the Bible.

As seen in an earlier chapter, the climate was 15-20° F. warmer than the world-wide average today. Vegetation was exceedingly lush, and many plants reached a huge size in such benevolent climate conditions. Many large land animals, such as the dinosaurs, roamed

the plains and forests. No high mountains on a par with those of today existed. Perhaps the highest was less than 5,000 feet. Disease was not nearly as prevalent as today. Therefore, man reached astounding ages (Genesis 5). Perhaps the animals, too, were exceedingly long-lived.

Mankind was not overly plentiful on earth at that time. While he lived as long as 900 years or more, his first-born child probably was not born until he was anywhere from perhaps 60 to 500 years of age. Noah, for example, was 500 years old before he fathered a child. Moreover, there is no evidence that families were larger in those ancient days than at any other time in history. Noah had only three sons, as did Terah who lived some 2700 years later. No statement is found anywhere in the Bible that suggests that there were large families in this period or any other period of history. Life must have been very slow moving with each marriage and each birth a great and signal event. The total population of the world before the flood possibly could have never exceeded one million.

Ancient man from this period was very skillful. His intelligence was easily as great as any later generation because he had been created a perfect man in the image of God. Only the results of sin were corroding him and causing his death. Early, very early, he thought that in this creation he could find security and hope. So Cain built a city (Genesis 7:14). His descendant Jubal invented musical instruments (Genesis 4:21), and his descendant Tubalcain forged articles of bronze and iron (Genesis 4:22). Man had learned to live very successfully in his environment.

But sin multiplied. Believers intermarried with unbelievers. The vast majority no longer thought about God. Rather, they placed their trust and confidence in the strong (Genesis 6:4), and their wickedness began to be boundless.

The Flood

So God intervened. The year was 4990 B.C. After preparing for the continuation of man and animals by means of the ark which Noah had obediently built, God destroyed the earth with water. God brought a great deep-space rain cloud into the path of the earth, and the water began to pour upon the earth. Simultaneously, the floor of the ocean erupted in massive volcanoes and water and lava flowed from the bowels of the earth.

The Bible says in Genesis 7:11:

In the six hundredth year of Noah's life, in the second month, the seventeenth day of the month, the same day were all the fountains of the great deep broken up, and the windows of heaven were opened.

Here is the first clue that speaks to the question of mid-ocean ridges and paleo-magnetic anomalies. The gigantic proportions of the Noachian deluge would have left tremendous scars on the ocean floor of such openings of the fountains of the deep. As water poured forth, basaltic lava also must have poured forth as happens with volcanoes today.

Thus, the great rifts in the ocean floor originated. For forty days enormous quantities of lava and water flowed from these fissures. Simultaneously, the earth was deluged with new water from deep space. The rate of deposition of the new water approximated that which would cover the entire earth to a depth of 100 feet per 24-hour period. Obviously, this changed the equilibrium of the earth's internal forces. Variations and reversals of the earth's magnetic pole were occurring at a time rate of hours or days. As each day's volume of the deep earth magmas poured from the earth's deep ocean rifts, the mid-ocean ridge was built up. Thus, the lava poured down the ridge slopes and solidified at increasingly great distances from the rift source. As the lavas cooled, they cooled with the earth's magnetic vector frozen within them. Additionally, great mountains were built as the earth came back to equilibrium. These processes caused further magnetic anomalies.

When the waters first struck the earth as it began to move through the great deep-space rain cloud, temperatures on the other side of the earth must have plummeted. In some areas animals by the thousands were instantly frozen by the first great temperature oscillation. As the waters rose they were buried in huge cakes of ice that covered hundreds of miles. Animals and insects by the millions were instantly buried, sometimes singly and sometimes in great twisted masses as the flood waters continued. Never before or since did conditions even remotely approach the possibility of fossilization that existed in these destructive days.

And then, as abruptly as it had begun, the deluge ended. The awesome rain of forty days stopped. The earth was stressed to its very

foundations by the fantastic magnitude of pressures and imbalances placed upon it by the new water. Already changes were taking place. The ocean basins were deepening. The mountains began to thrust higher, and, as the water settled into the ocean basins, the land was torn by the receding torrents. The floor of the ocean at the continental edges became deep with sediment. The ocean water was heavy with sediment so that most of the ocean floor had some sediment build up. Sedimentary rock, pockmarked by fossils, became abundant everywhere. The pressures of the flood waters upon water-deposited sediment produced ideal conditions for such rock development. Huge pockets of plants buried under thousands of feet of water and silt, and further compressed by gigantic mountain-building stresses, became fossilized into oil and other hydrocarbons.

As the water left the continental mass, it became evident that the whole face of the earth had changed. Huge areas were covered with ice because the world-wide temperature had dropped 20-30° F. Severe oscillations of temperatures continued for possibly hundreds of years. Therefore, some of the ice fields would recede and grow again repeatedly.

There was still one great continent, or possibly two, hooked together and separated on one side by the so-called Tethys Sea. Possibly, the continent was smaller after the flood due to the waters rising over the low-lying continental slopes, and the first evidence of what is now the Atlantic Ocean was seen. Great deposits of sediment were placed at the edges of the continents as the waters receded from the continents. The oceans themselves contained much sediment in suspension so that for a number of years sediment accumulation occurred at an abnormally high rate all over the ocean floor.

Why should we conclude that there was no continental division as a result of the flood? Several reasons suggest themselves. First, secular evidence suggests polar wandering or paleo-magnetic reversals much earlier than that produced by continental drift. The effects of the flood, without continental movement, could account for this. Secondly, the Bible gives no intimation of continental division occurring as a result of the flood. Thirdly, a single continent at the conclusion of the flood provides a very satisfactory solution to the problem of animals and man occupying every continent.

Let us think further about this. The Bible indicates that all flesh with the breath of life was destroyed in the flood of Noah's day, with the exception of Noah and his family and the animals with them in the

ark. Thus, in the year 4989 B.C., man and animals again began to populate the earth, beginning from the slopes of Mount Ararat where the ark had come to rest. The animals began to migrate to every area of the huge continent with nearly the same configuration as before the flood. For example, since there were only two elephants saved in the ark, all of the elephant population sprang from these two. For the next couple of thousand years, the habitation of the elephants was generally in that part of the continent toward which the original elephants began to migrate. Similarly, after leaving the ark, various species of animals began to migrate toward other parts of the continent, and their progeny continued to develop in that part of the continent.

Likewise, man began to move to the fertile crescent of the Mesopotamia Valley. Because he is by nature quite gregarious, he normally wanted to remain close to the main body of humans. (We see the same phenomenon today; our metropolitan areas encompass a large percentage of the earth's population.) At the same time, there were some independent individuals who began to migrate to other parts of the continent. Their number, however, was probably quite incidental as compared with the main body of civilization which developed on the plains of Shinar or Sumer in the Mesopotamia Valley.

Twelve to fifteen centuries passed. The flood was almost forgotten. Man began to develop into a cohesive social, political, economic unit. Under the leadership of possibly one of the greatest city builders of all time, the great cities of Babylon, Erech, Nineveh, and others were constructed. The Bible tells us that his name was Nimrod (Genesis 10:9-11). Even before the flood, mankind had developed technologies as diverse as forging bronze and iron and making musical instruments. Therefore, it is not at all surprising that the people of Nimrod's day showed such competence as city builders. Unquestionably, much of the technology developed before the flood was taught to post-flood generations by the greatest boat-builder of all time, Noah. Expertise of the highest order would be required for one man to single-handedly construct an ocean-going vessel 450 feet. The Bible tells us that Noah lived for another 350 years after the flood, so he had ample opportunity to share his technical and scientific knowledge.

By the year 3200 B.C., man had become quite self-sufficient. He had forgotten about God and had placed his reliance on the skills and

ingenuity of man. He had found that all kinds of wonderful comforts and security could be developed from the earth. He began to honor those who were strong. His dependence upon God had become extinct almost. Instead he worshiped the creation itself.

Moreover, God had decreed to Noah that man was to be fruitful and was to multiply and fill the earth. But man was not obedient to this command. Except for a few unsociable nomads, most of the population congregated in the great cities whose foundations had been laid by Nimrod. Some had begun to live in Egypt and some lived in Palestine, in the area of Jericho, but these, too, were incidental developments compared with the super civilization which developed around Babylon.

Continental Division

Almost 2,000 years earlier God had visited the earth with the awe-inspiring flood that destroyed the world of that day because of its sins. Then about the year 3153 B.C., terror struck this planet. The world has again rejected God, but God had promised that He never again would destroy the world with a flood. But God did act. He did not act with a flood, but He acted by bringing confusion into the affairs of man. He confused their ability to communicate by changing their languages and dividing the continent into a number of continental areas.

Continental division must have been exceedingly traumatic. The earth began to shake and buildings began to fall. The earth began to move; the great continent which survived the flood began to break up. Relentlessly, great masses of earth continental size began to slide over the ocean floor. At the forward edge of these masses, mountain building began to occur with dramatic suddenness. Land masses of sedimentary rock were twisted and folded and overturned. Like a toy the earth shuddered for the second time in 2,000 years under stresses too huge for our minds to comprehend.

And man was spread apart and isolated. He was isolated by vast bodies of water and by changes in language. He was not able to frustrate God's plan that he should be fruitful and multiply and fill the earth. Only when he learned to prevent conception, as he has in our day, would he again become guilty of the monstrous sin of disobedience to this command.

Perhaps physically the earth was ripe for this kind of rupture.² Many residual tensions could have been present due to the catastrophic nature of the flood. In any case, God acted, and the continent began to split apart. The animals moved with the part of the fragmented continent on which they happened to be living. Most of mankind lived in or near the Mesopotamia Valley, and they remained in the same area which became known as Africa and Asia. The nomads who had migrated away from the population centers moved with the continental pieces on which they lived. Thus, for example, the nomads who had begun to live in that part of the continent which became North America, became the ancestors of the American Indian.

The movement of the continents must have been fantastic in its impact upon the physical earth. We can see the results, for example, on the western side of North and South America. Scientific evidence shows that this was the leading edge of the part of the continent that broke away from Europe and Africa. As this continent moved over the ocean floor, great mountain building resulted, and so we find the great mountains and high plateaus of the Americas all along the western side. The eastern side shows no such characteristics. This also explains the fact of earthquake zones being principally located along the western area of the Americas.

Possibly as a result of the tremendous changes which occurred in the earth by the continental division, the ocean floor could have ruptured again in a fashion similar to that which occurred during the flood. Because of these changes as well as the imbalances that resulted from the movements of the continents, many magnetic reversals of the earth's polarity could have taken place, freezing additional magnetic anomalies in the lava which flowed from the great sores in the ocean floor.

When the dust had settled, we would have discovered that the earth had become pretty much what we see it to be today. It was still colder worldwide than today, but a warming process, beginning after the extreme cold which gripped the earth immediately following the flood, was taking place. While many of the large pre-flood animals whose existence depended upon a warm climate and heavy vegetation had become extinct, others flourished and continue to exist today. Because man had been forcibly separated by language, many and varied races and nations began to come into being at widely separated places in the world. The science of writing, which probably had been invented by the Sumerians as a result of the God-sent confusion of

languages, was further developed by each emerging race. And so the earth left its prehistorical period and entered into the period covered in ancient history books.

This attempt at a reconstruction of a few aspects of the prehistorical world seems almost like fantasy, like the wildest kind of speculation. But the Bible tells us that the world began some 13,000 years ago. It details the fact of a world-wide deluge that destroyed the face of the earth. It describes the mountain building that followed this fantastic flood. It gives us the truth of continental division about 5,000 years ago, and the scientific evidence agrees with these startling Biblical assertions. It must, of course, because the Bible is infallible truth.

If our scientists would simply examine the evidence that continues to pour forth under present-day research in the light of the Biblical statement and timetable, they would make far more progress in reconstructing the history of man and the earth.

NOTES

¹ See Appendix XI for a discussion of the problem of lack of C14 in many fossils and fossil fuels, such as coal and oil.

² See Dr. Cook's interesting idea, that the stresses caused by the load and flow of a large ice cap might be sufficient to cause the breakup of a continent, in *Prehistory and Earth Models* by Melvin A. Cook (London: Max Parrish, 1966), Chapters 7-10.

Chapter 16

Conclusion

In our study, we began by insisting upon the absolute trustworthiness of the Biblical record. Applying this presupposition to Genesis 5 and Genesis 11, we unravelled them to produce an exact chronology that began with Adam in 11,013 B.C. We addressed ourselves to the troublesome period of the judges. Again, we were able to develop a very exact chronology.

We then compared the dates found by Biblical reckoning with some of the available archaeological evidence. We saw that the secular evidence of the place and the time of the earliest great city civilization in the Mesopotamia Valley agreed very well with the Biblical account. We also discovered that events related to the Tower of Babel in all probability made their impact on the development of writing as well as expediting the Egyptian civilization to a high level of accomplishment beginning with the First Dynasty.

When we continued our study of Egypt, we discovered three precise chronological reference points that span almost 700 years and relate to three of the greatest pharaohs of antiquity. The exact correlations between the archaeological record and the sacred pages establish the following absolute dates:

Pharaoh	Dynasty	Reign B.C.
Sesostris III	12th	1888-1850
Thutmosis III	18th	1501-1447
Rameses II	21st	1279-1212

The fact that we have found correlation between dates established by astronomical evidence and the dates established by

Biblical reckoning for these three great pharaohs indicates the reliability of our conclusions concerning the trustworthiness of the Biblical record. According to the laws of probability, we might expect one Biblical date to coincide with one secular date, but it could never be coincidental that three dates or even two would agree as they have in our study. We believe that the archaeological and astronomical evidence provides serious confirmation to the chronology we have set forth in this book.

A by-product of our archaeological study has been the development, on a very minimal basis, of an understanding of the Egyptian governmental situation from the 12th Dynasty. Hopefully others can build upon this to develop a further understanding of this period in history. Because the archaeological record is replete with information from these dynasties, much has been written about them. Relatively little, however, has been tied to the Biblical account. We trust this study will help others to mesh the sacred with the secular records.

Generally, the physical sciences have been considered to be the final authority on the proper understanding of the earth's age. Among many others, two prominent sources of scientific evidence, which have been studied extensively in an attempt to date the world, are the oceans and the radioactive decay of certain elements. Therefore, we faced these issues squarely.

We showed that the seemingly unrepachable conclusions concerning the age of the earth, which were developed from recent scientific investigations, are not as solid as they seem. The scientists' conclusions have been received with confidence by most people mainly because their results have been based on basic truths which under other investigations have consistently proven reliable. Scientists have shown good insight into the physics and chemistry of present day phenomena. Despite their analysis of the present environment, their conclusions concerning the age of the earth must be considered untrustworthy for two important reasons. The most important reason is that their conclusions do not take into account all of the available data, namely, the Biblical truth which alone gives the accurate time table.

Also, we have shown that even when scientists start with sound first principles, so many unverifiable assumptions must be made in the application of those principles that the conclusions are equally unverifiable and, therefore, must be considered incomplete. Their

present conclusions concerning the age of the earth are certainly not the final word. In fact, the scientists' conclusions not only appear questionable when we consider all available secular data, but seem even more unreliable when we view them in the light of the Bible's answer to the origin of the earth. Indeed, the Bible's clearer alternative also explains many otherwise mysterious problems. We have shown that with the truth offered by the Bible, it is possible to examine the scientific evidence and reconstruct more accurately and consistently the true picture of the earth's history.

We have undertaken this dating investigation with complete confidence in the Bible's accuracy and integrity, even on scientific subjects. The faithful and trustworthy character of the Word of God has given us boldness to use it as a plumb line by which to evaluate any conclusions of man. We have shown that the scientific evidence never threatens the Bible. It is only the unwarranted conclusions based on faulty assumptions which appear to contradict the Bible.

We closed out our study by attempting a reconstruction of some aspects of ancient history beginning with creation. While this reconstruction is speculative because of a number of assumptions which were required, I believe it is much closer to actuality than any others heretofore offered. The Biblical anchors of a precise timetable of history, together with Biblical disclosures such as the declaration of continental division, the flood, and the mountain building which followed the flood, all serve to provide dramatic help in this reconstruction. The scientific evidence of C14 activity, the chemical composition of the oceans and continents, the great volcanic ridges and rifts on the ocean floors, the "fit" of continent to continent, the presence of huge ice caps, as well as much other evidence, assist us in this reconstruction. We discovered that in the 6023-year period from creation to the flood, the world was 10-15° F. warmer than today. The mountains were lower, the seas were shallower, the vegetation was more luxuriant. The one continent that existed was populated by many animals but comparatively few men. The ravages of disease were undoubtedly still quite underdeveloped so long life spans were probably normative.

The flood of 4990 B.C. brought cataclysmic changes to planet earth. Inundated by being passed through a huge deep space water cloud as well as by deep earth water, the face of the earth was drastically altered. The world-wide temperature plummeted 20-30° F., inducing great ice caps. Much mountain building resulted as did

tremendous layers of sedimentary rocks, pockmarked by fossils and gouged by deep canyons and valleys.

The continental division of approximately 3153 B.C. again produced much mountain building. The breakup of the continent that had survived the flood assured the presence of man in every part of the world.

In our study we saw that one of the biggest errors in scientific conclusions is the perspective of time. When available evidence is examined in the crucible of a four and a half billion year time span, there is confusion as well as anomalies. When the time span of this earth's existence is reduced to the 13000 years taught by the Bible, and the available evidence is studied within this framework, the whole picture of the earth's history begins to focus more clearly. For example, the concept of a 13,000 year-old world which began to be repopulated after the flood some 7000 years ago, and which 1500 years later allowed the spawning of the first great city civilizations, surely makes more sense than the idea of mankind being around for hundreds or even thousands of millenniums, and then becoming a cohesive city civilization only in the last 5500 years. Furthermore, the apparent possibility of the end of the age occurring in our time accords far better with the shorter timetable.

Admittedly, the first purpose of the Bible is not to be a textbook of science or history. The Bible is fundamentally a presentation of God's grace revealed through Jesus Christ. But, as we pointed out in Chapter 1, when the Bible does speak in any field of learning, it does so with great care, accuracy, and authority. The following three reasons might be advanced for this.

1. These subjects are often an integral part of the plan of salvation.
2. They are part of God's message to man.
3. By reason of His very nature God is accurate when He speaks.

Therefore, the Bible has much more to offer than many have supposed. I hope that others will be encouraged to build upon the suggestions offered in this book.

Appendix I

ACCESSION YEAR OF REHOBOAM

The foundation date must be termed 931/930 to be totally accurate. Thiele writes:

Attention, however, should first be called to the fact that when the date 931 is given as the accession year of Rehoboam in the Southern Kingdom and the year Jeroboam I seized the throne in the north what is actually meant is that Jeroboam came to the throne some time between the first of Nisan, 931, and the first of Nisan, 930, and that Rehoboam's accession took place some time between Tishri 1, 931, and Tishri 1, 930. Inasmuch as the accession of Rehoboam preceded that of Jeroboam, the accession of the latter must have taken place at some time after Tishri 1, 931 and before Nisan 1, 930. All that we can say with complete accuracy as to the time when these two kings began their reigns is that this took place some time after Tishri 1, 931, and before Nisan, 930, and this is better expressed by the symbol 931/930 than by the precise date 931. And due to the fact that in neither Judah nor Israel did the beginning of the regnal year synchronize with the beginning of our calendar year of January 1 and that any particular Hebrew year thus overlapped two of our calendar years, the only correct symbol under the circumstances would be such a dual symbol as 931/930.¹

I believe, however, that 931 is the correct date of the two possibilities, 931 and 930. There are other relationships within the Bible that strongly support the date of 931. Hopefully, this supporting data will be offered in another volume. However, in the main text of this book much additional support for this date has been presented, particularly from the reigns of the great pharaohs of Egypt.

¹ Edwin R. Thiele, *The Mysterious Numbers of the Hebrew Kings* (Grand Rapids, Mich.: Wm. B. Eerdmans Pub. Co., Revised Ed., 1965), pp. 53-54.

Appendix II

THE “REST” OF THE LAND OF CANAAN

The question should logically be asked, “Why does the Bible record ‘the land had rest . . . years’ in these¹ four passages in the Book of Judges?” One would think that this phrase would not apply to a period of war as serious as that of Joshua’s conquest of Canaan. The word for “rest” used in these phrases is the Hebrew word *shaqat*. It is used about thirty times in the Old Testament and is almost always translated “quiet.” It is used twice in the Book of Joshua and in both cases it is used in circumstances similar to those in the Book of Judges.

The passages in Joshua are Joshua 11:23:

So Joshua took the whole land, according to all that the LORD said unto Moses; and Joshua gave it for an inheritance unto Israel according to their divisions by their tribes. And the land rested from war.

Joshua 14:13:

And Joshua blessed him, and gave unto Caleb the son of Jephunneh Hebron for an inheritance. . . .

Joshua 14:15:

And the name of Hebron before was Kirjatharba; which Arba was a great man among the Anakims. And the land had rest from war.

The time described was the end of the initial conquest of Canaan. These statements in Joshua were made about seven years after the entrance into Canaan. The occasion was the giving of the inheritance of the land to the Israelites even though all the enemy had not been defeated.

Warfare would still continue as implied by such statements as Joshua 11:22:

There was none of the Anakims left in the land of the children of Israel: only in Gaza, in Gath, and in Ashdod, there remained.

We read in Joshua 14:12:

Now therefore give me this mountain, whereof the LORD spake in that day; for thou heardest in that day how the Anakims were there, and that the cities were great and fenced: if so be the LORD will be with me, then I shall be able to drive them out, as the LORD said.

And in Joshua 17:17-18:

And Joshua spake unto the house of Joseph, even to Ephraim and to Manasseh, saying, Thou art a great people, and hast great power: thou shalt not have one lot only: But the mountain shall be thine; for it is a wood, and thou shalt cut it down: and the outgoings of it shall be thine: for thou shalt drive out the Canaanites, though they have iron chariots, and though they be strong.

Yet the first two passages in this appendix emphasize that the land had rest from war. This could be understood as “rest from the major conflict” with the future wars against the enemy to be considered as “mopping up” operations. Or it could mean that a period of time was to pass during which the division of the land between the tribes would take place and during this time the whole idea of conquest would be set aside.

Another possibility suggests itself, however. In both verses that mention “the land had rest from war,” the accompanying information indicates that an inheritance was received. In the first, Israel received the whole land as their inheritance (Joshua 14:13). If we realize that Canaan was the promised land, the land that prefigures salvation and heaven, we can begin to see why God chose this particular language. In these passages God is pointing to the rest that the believer receives when he is saved and the rest that is brought to fullest fruition when the believer inherits the new heaven and earth. Hebrews 3 and 4, of course, presents Canaan as an Old Testament type, prefiguring the rest the believer receives in Jesus Christ.

The giving of Hebron as an inheritance to Caleb further strengthens this concept. The only land that Abraham ever purchased was located in Hebron (Genesis 23:19). He purchased this land as a burial ground. It was an act of faith that indicated his complete trust that God would some day give the world to the believers as an everlasting inheritance (Romans 4:13). When the world is given to the believers as an everlasting inheritance, it will be as the new earth

where righteousness dwells (II Peter 3:13). The historical type in Joshua must then include the statement “the land had rest from war” (Joshua 11:23) for that is the condition of heaven or the new heavens and the new earth. The meek shall inherit the earth when Satan has been destroyed from the earth.

In the next book, Judges, however, the notices which contain the word *shaqat* do not make reference to the fact that there was no war (Judges 3:11, 3:30, 5:31, 8:28). Nor do they speak of the land as an inheritance for Israel or any individuals or tribes. Rather, Israel lived in the presence of enemies as part of God’s expressed will for them.

We read in Judges 2:23-3:1:

Therefore the LORD left those nations, without driving them out hastily; neither delivered he them into the hand of Joshua. Now these are the nations which the LORD left, to prove Israel by them, even as many of Israel as had not known all the wars of Canaan.

We immediately see in this arrangement a similar figure to the verses we looked at in Joshua. Whereas in Joshua the type was of heaven and the new earth where all of Satan’s activities have come to an end, in the references in the Book of Judges, the figure is that of salvation. When we are saved, we have come to the land of rest but the warfare has not come to an end. It has ended as far as our relationship to God is concerned (we are at peace with Him), but it is not ended as far as our relationship to Satan is concerned. God has assured us that Satan cannot make us sin. He has assured us that we can be victorious over sin; He has assured us that nothing can separate us from the love of God. But we must fight the good fight. We must crucify the flesh with its desires. We must strive for holiness.

In other words, we have arrived in the land of rest, but the war is not over. It is over in principle because of Christ’s victory on the cross over Satan. It is over in principle because the believer has been freed from bondage to Satan, but Satan still attacks, and in this sense the warfare continues. For a time, Satan can appear to be victorious (witness David’s sin of adultery and murder), even as Israel was in bondage for a time to the enemy, but in this bondage the Christian does not again become a citizen of Satan’s kingdom. He never leaves the land of rest which is salvation through Christ. Israel, too, continues in the land of rest even though they suffered affliction by the enemy when they took their eyes off God. This affliction was brought against

them by Cushanrishathaim, Eglon, Jabin, and Midian, during the first 200 years in the land of rest. It is surely more than coincidental that the same word *shaqat* is used in other prophetic passages which anticipate salvation (see Jeremiah 30:10, 46:27, Ezekiel 38:11).

Therefore, in these four historical chronological notices of Judges, God is giving more than just historical information. He is using these figures or types of salvation and heaven even as Canaan and Israel are great types of heaven and the believers who enter heaven. It becomes quite logical then that the periods during which the land had rest would contain within them conquest and bondage.

¹ See Judges 3:11, 3:30, 5:31; 8:28.

Appendix III

AARON'S GENERATION AND THE NUMBER 153

In the first four chapters of this book we learned that God has given us a trustworthy and accurate calendar that begins with Adam's generation and continues generation to generation until the time of Aaron. Now we are going to demonstrate that God has also hidden within Scripture the truth that this generation pattern continues all the way to Christ's generation. In developing this truth, we shall also discover that God utilizes the mistakes of men to accomplish His perfect will. For example, He used the sins of Joseph's brothers to save the family of Jacob during the famine. Before seeking the generation sequence beyond Aaron, let us refresh our memory by recapitulating our previous findings.

We learned that Enosh, grandson of Adam, became the figure or representative of the first patriarchal period or generation. His period continued for 905 years and was followed by a succession of other generations, each named after a patriarch and each lasting for the entire life span of that patriarch. These generations followed one another until just before the flood. Even as in the case of Adam where God gave us detailed information to show that Seth was the immediate son of Adam, and Enosh the grandson, so at the flood, God provided additional information. Lamech, the patriarch who followed the generation of Methuselah was 182 years old when Noah was born to him as an immediate son. We also discovered that Shem was the grandson of Lamech. Shem in turn became the figure or personality of the next patriarchal period or generation.

Again, there follows a succession of generations each named after a patriarch and each beginning with the year of the birth of that person and ending with the year of his death. This calendar continues through the generation of Nahor. In the 130th year of the patriarch Terah who followed the generation of Nahor, Abram was born to Terah and was, of course, an immediate son. Because at this time God established Abram as the head of the Jewish nation, as well as the father of all

believers, God again gives much more detail regarding these events in history. He shows us quite plainly that Isaac was the immediate son of Abram, and that Jacob was the immediate son of Isaac. The time sequence during this important period is carefully given in the Bible.

Following Jacob, we discovered that Levi, the immediate son of Jacob, was the representative of the next patriarchal period. He was followed by Amram. At Amram's death Aaron became the representative for the next patriarchal period. Thus, we have a consistent and logical sequence in the march of time from Adam to Aaron.

After Aaron a problem arises. Aaron died 40 years after the Israelites left Egypt, but there is no genealogical record that follows through in an unbroken fashion from Aaron to Christ, who, as we have seen is the representative or head of the last and final generation. Thus, there apparently exists a discontinuity in the genealogical table.

This is not fatal to the development of a chronological timetable, however, because there is sufficient evidence available to tie the time of Aaron to the time of Christ. This evidence is based on a great deal of information that diligent Bible study as well as archaeological and historical research reveals. Is there genealogical continuity in any sense? A search for genealogical continuity between the Exodus and Christ reveals two possibilities. The first is to investigate the tribe of Judah from which Jesus came. But God gives no information concerning the tribe of Judah that might be used for calendar purposes, so it must be excluded. The second may be found by looking again at Aaron and the tribe of Levi. We will discover as we look at the Biblical record that there may exist a continuity between the generation of Levi, Amram, Kohath, and Aaron with that of Christ.

The one continuous event that extended from Aaron to Christ was the priesthood after the order of Aaron. The Levitical priesthood as it is called in the Book of Hebrews continued until it was replaced by Christ who was a priest after the order of Melchizedek.

We read in Hebrews 7:11-12:

If therefore perfection were by the Levitical priesthood, (for under it the people received the law,) what further need was there that another priest should rise after the order of Melchisedec, and not be called after the order of Aaron? For the priesthood being changed, there is made of necessity a change also of the law.

Thus, in a real sense the generation of Aaron continued until the coming of the generation of Christ. Christ's coming effectively ended the bodily descent of the order of Aaron.

This becomes even more evident when another priest arises in the likeness of Melchizedek, who has become a priest, not according to a legal requirement concerning bodily descent but by the power of an indestructible life (Hebrews 7:15, 17).

The Bible teaches that in the Old Testament, the Aaronic priesthood continued until the coming of Christ.¹ It then ceased and Christ became the high priest. He continues as high priest throughout the balance of history and on into eternity. Since Aaron was the representative of the Old Testament period, we could logically say that Aaron's generation or patriarchal period continued until Christ. Christ's generation followed Aaron's and continues on forever.

The questions that then must be asked are: What is the precise date of the end of Aaron's generation and the beginning of Christ's? If Christ's generation actually began with His birth, which occurred several years B.C., must we decide that Aaron's generation continued until the actual birth year of Christ? We note that for calendar purposes Christ's generation began at A.D. one. We are presently in the calendar generation of Jesus Christ. A.D. 1950 signifies the year of our Lord 1950 which indicates the passage of 1950 years from the beginning of A.D. one rather than 1950 years from the birth of Christ several years B.C. We also know that Aaron's generation began with his birth. According to Exodus 7:7 he was three years older than Moses. Moses was 120 years old when he died (Deut. 34:7). Moses died just prior to the end of the wilderness sojourn which was the year 1447 B.C. Thus Aaron would have been born 123 years earlier which was the year 1530 B.C. Thus, it would appear that we are to consider that Aaron's generation continued from his birth in 1530 B.C. to A.D. one at which time Jesus' generation began. Therefore, it continued for a period of 1530 years. The genealogical table is thus completed without any exceptions from Adam to Christ.

A Catch of 153 Fish

We now look at the Gospel of John to possibly find another clue to help us relate Aaron's generation to Christ's generation, and to show that God intended for Aaron's generation to continue until Christ's began in A.D. zero. We cannot be positive that the arguments

which will now be presented are with absolute certainty the intention of God. The truth which we will outline is, however, in keeping with the nature of Biblical truth and, therefore, should at least be considered by a student of God's Word.

In John 21:10-11 we read:

Jesus saith unto them, Bring of the fish which ye have now caught. Simon Peter went up, and drew the net to land full of great fishes, an hundred and fifty and three: and for all there were so many, yet was not the net broken.

This event took place after Jesus had risen from the dead. Seven of the disciples, including Peter, had gone fishing. They had toiled all night without catching anything. At daybreak Jesus appeared and told them to cast their nets on the right side of the boat. They discovered the net contained 153 large fish. Theologians have struggled with the number 153. They have rightly sensed that it is somehow symbolically important.

How does it figure in God's revelation? If we remember that Jesus had called Peter, James, and John from their fishing some three and one half years earlier, we can begin to find an answer. At that time (see Luke 5:1-11), they had toiled all night and caught nothing. At Jesus' word they let down their nets and caught so many fish that their nets were breaking and their boats were sinking. Jesus then said to Peter in Luke 5:10, "Fear not; from henceforth thou shalt catch men." He, at that time, in a definite fashion, links the catching of fish with the catching of men, or with bringing those who have been chosen to salvation into God's kingdom.

Now it is but a few days before Christ's ascension. He is ready to give them the command to go into all the world to preach the Gospel and make disciples of all nations (Matthew 28:19). They again catch fish as they had done three and one half years earlier, but with two differences. The net did not break, and the fish were numbered.

Were these fish symbolical of all of the people who would become Christians in the New Testament era? It certainly could be so in the light of the mandate given by Christ to these same disciples to go out into the world and make disciples. Could the unbroken net be symbolic of the certainty of the salvation of the elect? One is reminded of the parable recorded in Matthew 13:47-50:

Again, the kingdom of heaven is like unto a net, that was cast into the sea, and gathered of every kind: Which, when it was full, they

drew to shore, and sat down, and gathered the good into vessels, but cast the bad away. So shall it be at the end of the world: the angels shall come forth, and sever the wicked from among the just, And shall cast them into the furnace of fire: there shall be wailing and gnashing of teeth.

Here Christ definitely relates the catching of fish in a net to those who are to be saved.

What then is the significance of the number 153? Since no facts in the Bible are accidental, what was God's purpose in stipulating the number of fish? At least one answer is suggested. If we remember that Jesus is our eternal high priest, who was foreshadowed by the Aaronic priesthood, we can see how God relates these two generations through the number 153.

The Aaronic generation or priesthood continued 1530 years. It was symbolic of the present age.

We read in Hebrews 9:8-9:

The Holy Ghost this signifying, that the way into the holiest of all was not yet made manifest, while as the first tabernacle was yet standing: Which was a figure for the time then present, in which were offered both gifts and sacrifices, that could not make him that did the service perfect, as pertaining to the conscience.

By this the Holy Spirit indicates that the way into the sanctuary is not yet opened as long as the outer tent is still standing (which is symbolic for the present age).

It is followed by the generation of Christ as we know it today and which will continue until Christ returns.

Matthew 24:34:

Verily I say unto you, This generation shall not pass, till all these things be fulfilled.

God tells us in Matthew 28:19-20:

Go ye therefore, and teach all nations, baptizing them in the name of the Father, and of the Son, and of the Holy Ghost: Teaching them to observe all things whatsoever I have commanded you: and, lo, I am with you alway, even unto the end of the world. Amen.

The ingathering of souls who become a kingdom of priests to Christ during the entire New Testament period, symbolized by the

153 fish, and the unbroken net is to continue throughout Christ's generation. Not only is Christ's generation foreshadowed by the Aaronic generation which preceded it but also through the common use of the number 153.

A very important question arises at this point. Is there Scriptural warranty for relating two events by the numbers 1530 and 153, as the Bible teaches, a period of 1530 years and about 153 fish? I believe there is. God relates spiritual truth to spiritual truth by the use of language as well as by symbols such as the sacrifices, and the temple, etc. He also relates spiritual truth to spiritual truth by means of numbers.

The number seven, for example, is considered by most believers to be the number of perfection. This thought was already established at the time of creation when God created the earth and its creatures in six days and rested on the seventh day. So whenever we see the number seven in the Bible we sense in its use the implication of God's perfect will having been performed.

As we study the Bible, we shall also find that when God uses a certain number to convey, symbolize, or illustrate spiritual truth, he often uses that same number, but in multiples of 10, to relate spiritual truth to spiritual truth. Thus, the 10 silver coins of Matthew are indicative of the completeness of believers, and so are the 100 sheep of Luke 15.

Likewise, I believe God may be relating the generation of Aaron to the generation of Christ by the number 153. The number 153 has the same symbolic or spiritual value as the number 1530. On one side it is the 1530 years of Aaron's generation or priesthood. On the other, it is the sum of all who will become priests under the priesthood of Christ. They are symbolized by the 153 fish.

In the introduction to this Appendix, reference was made to the sovereignty of God in utilizing the sins of man to accomplish His perfect will. If we reflect on the foregoing discussion concerning Aaron's generation and the number 153, we can see that the error made by Abbot Dionysius Exiguus² in the sixth century in establishing the birth date of Christ was probably a part of God's perfect plan. This Abbot, who had been given the task of tying the birth date of Christ to the calendar of his day, unexplainably made an error of several years. If he had accurately calculated the year of Jesus' birth, Aaron's generation would have been a few years less than 1530 years. As it is,

his computation gives us a figure for Aaron's generation of 1530 years which interrelates so beautifully with New Testament truth.

NOTES

¹ Was the priesthood of Aaron to continue everlastingly? We read in Exodus 40:15 that Aaron's sons would be a "an everlasting priesthood throughout their generations." How then can we contend that it continued only until the generation of Christ began? See Appendix IV for a discussion of this.

² Jack Finegan, *Handbook of Biblical Chronology*, p. 132.

Appendix IV

THE PRIESTHOOD OF AARON

With the coming of Christ, the Aaronic priesthood ceased physically. It was a change of such consequence that in a real sense the Aaronic priesthood ended with Christ's coming, even though in another sense it does continue everlastingly through Christ. Because the priesthood of Christ was a better priesthood than that of Aaron, and in fact, fulfilled all of the purposes and functions of the Levitical priesthood, it guaranteed the continuance of the priesthood until the end of the age and on into eternity. It is very helpful to note that in the account of the perfect temple given in the last eight chapters of Ezekiel, the Levitical priest named is not Aaron but Zadock. The meaning of Zadock is the same as that of Zadek or Melchizedek. It means righteous. This priest of Ezekiel can, therefore, be none other than Christ, who is portrayed as the head of the Levitical priesthood in the new heaven and earth. Therefore, God shows that while Christ was physically a descendant of Judah, He says in Hebrews 7:14:

For it is evident that our Lord sprang out of Juda; of which tribe Moses spake nothing concerning priesthood.

While His priesthood is an eternal one after the order of Melchizedek, it does satisfy the prophesy of the Levitical priesthood continuing eternally. In the Old Testament it was prophesied that the Israelites would be a kingdom of priests if they obeyed God. We read in Exodus 19:5-6:

Now therefore, if ye will obey my voice indeed, and keep my covenant, then ye shall be a peculiar treasure unto me above all people: for all the earth is mine: And ye shall be unto me a kingdom of priests, and an holy nation. These are the words which thou shalt speak unto the children of Israel.

The Israelites were condemned by the law as the Book of Romans clearly teaches, thus precluding a priesthood by virtue of physical descent from Aaron. It was Christ who became the high priest ruling

over a kingdom of priests who brought the fulfillment of this promise as He provided atonement for our sins and made us righteous before God.

I Peter 2:9:

But ye are a chosen generation, a royal priesthood, an holy nation, a peculiar people; that ye should shew forth the praises of him who hath called you out of darkness into his marvellous light.

Revelation 1:5-6:

And from Jesus Christ, who is the faithful witness, and the first begotten of the dead, and the prince of the kings of the earth. Unto him that loved us, and washed us from our sins in his own blood, And hath made us kings and priests unto God and his Father; to him be glory and dominion for ever and ever. Amen.

The promise that the Levitical priesthood would be an everlasting priesthood as well as the promise that those who obeyed would be priests, therefore, both find their fulfillment in Jesus Christ. This is true of all the Old Testament laws that deal with the sacrifices which were to continue everlastingly (Levitical 16:34, Levitical 24:3) and which do so in Jesus Christ.

It is interesting to note that Elizabeth, the cousin of Jesus's mother, Mary, was of the daughters of Aaron (Luke 1:5). One could easily surmise then that while Joseph was a direct descendant of David, as was Mary on her father's side, on her mother's side she was a descendant of Levi, as was her cousin Elizabeth. Thus, in this manner Christ could have been a direct descendant of Levi, though this is not the force of the argument in Hebrews 7.

In any case, the obvious teaching of the Bible is that the generation of the Aaronic priesthood continued by physical descent until Christ came. Christ legitimately, by virtue of his priesthood, was the representative of the next patriarchal period in which we live.

Appendix V

FURTHER NOTES ON DEEP SPACE WATER

Subsequent to 1972, when *Adam When?* was first published, a great amount of space exploration has taken place. This exploration has provided interesting and significant information relative to the matter of the earth being inundated by water when, as the Bible tells us in Genesis 7:11, “the windows of heaven were opened.” If, as we have concluded, at the time of the flood of Noah’s day, God caused the earth to pass through a deep space water vapor cloud, then we would expect some evidence of this to be found when other planets in our solar system are examined. This should be expected because of the great size of a deep space water vapor cloud.

Indeed, recent space exploration has verified this possibility. Ice, water, or water vapor has been found on almost all of the planets and/or on some of the satellites that revolve around the planets. Scientists puzzle over how the ice found on the moon could be there. That is not a serious problem to solve if the moon passed through the same water cloud that the earth passed through about 7,000 years ago.

Some of the findings of recent space exploration relative to the presence of water on other planets are quoted below.

Extensive articles concerning the findings of the Mars Pathfinder Mission were published in the December 5, 1997, issue of *Science* magazine, which reports:

Many characteristics of the landing site are consistent with it being shaped and deposited by the Ares and Tiu catastrophic floods (page 1745).

... knotty rocks may be conglomerates formed from silty sands and pebbles deposited from streams or floods or along coasts (page 1765).

In *Design and Origin of Astronomy*, edited by George Mulfinger

and published by the Creation Research Society, the statement is made:

The apparent dry Martian river beds are undoubtedly one of the most intriguing discoveries about Mars. They strongly resemble earthly river beds. And yet, there are differences as well, for unlike earth rivers, many of the Martian channels have no source, they just appear. Many begin in what is called chaotic terrain (page 84).

The references to catastrophic floods and rivers without a source are in complete agreement with the fact that great deposits of water were placed on Mars as well as on the earth as they passed through a deep space water vapor cloud 7,000 years ago.

The 1995 edition of the *Britannica: Macropaedia, Knowledge in Depth* made numerous references to ice, water, and water vapor on many of the planets and/or some of their satellites. Some of the references are as follows.

Page 455:

In the outer solar system are low density satellites such as Saturn's Tethys with a density of 1.2 g/cm^3 . This object must consist mainly of ice.

Page 465, in a statement discussing surface properties of Mercury:

Subsequent radar observations have shown small, highly scattering polar caps, interpreted to be water and other ices trapped in high-latitude areas perennially in shadow.

Page 494, a statement discussing the atmosphere of Mars:

Evidence suggests that the atmosphere was much denser in the remote past and that water was once much more abundant on the surface. Only small amounts of water are found in the lower atmosphere today, occasionally forming thin ice clouds at high altitudes and, in several localities, morning ice fogs.

Page 495:

Water is only a minor constituent of the Martian atmosphere (a few molecules per 10,000 at most), primarily because of low atmosphere and surface temperatures. The Martian atmosphere is effectively saturated with water vapor, yet there is no liquid

water. The temperature and pressure of the planet are so low that water molecules can exist only as ice (solid) or as vapor.

Page 507, in a statement discussing two of the four largest moons of Jupiter, which:

. . . had surfaces covered with water ice.

Page 517, in a statement discussing the satellites of Uranus:

Water ice shows up in the spectra of the five major satellites. . . . The obvious implication is that the surfaces consist of dirty water ice.

Page 521, regarding Neptune:

Clouds of water ice are expected to occur at depths within Neptune's atmosphere where the pressure is in excess of 100 bars.

Page 522, in a statement discussing Triton, the largest moon or satellite of Neptune:

Triton's low mass is likely a consequence of a predominantly water-ice interior surrounding a denser rocky core.

The Biblical account of the flood of Noah's day helps greatly to explain much of the evidence of ice on the moon and water on Mars as well as suggest a solution to the presence of ice, water, or water vapor on some of the other planets or their satellites.

Appendix VI

FURTHER NOTES ON THE REIGN OF SESOSTRIS III

In Chapter 7 the timetable of the reign of Sesostris III was discussed. We discovered that 1888 B.C. appears to be the logical date for his first year. This satisfies the secular record as determined by a Sothic Festival in the seventh year of his reign and relates it to a like celebration on Thoth I, A.D. 139. It also satisfies the Biblical record very precisely.

Some archaeologists, however, conclude that other data must be considered to arrive at the precise date of the Sothic Festival in any year. Based upon tables prepared by Neugebauer they conclude that the date of Sothic rising depends on the arc of vision (b) and the latitude of the city from which the viewing took place. Moreover, the 1460 years must be corrected slightly to take into account the precession of the equinoxes. Edgerton concludes that the viewing could have taken place from as far south as 29.2° (el-Lahem) or as far north as 30.1° (Heliopolis). Furthermore, he believes the arc of vision could have ranged from 8.6° to 9.4° . Thus, he concludes the first year of Sesostris III could have been somewhere between 1870 B.C. and 1882 B.C.¹ He hastens to add, however:

These limits may be a few years too narrow, since the value of B is subject to correction by competent astronomical authority on the basis of future experiments.²

We might note, however, that assuming Edgerton's computations and assumptions are correct, the city of Tanis or Avaris must also be considered as a candidate from which the viewing took place, for it was the seat of rule during Joseph's rule as Prime Minister. If B equaled 9.5° at the latitude of Tanis (31°), then the 7th year of Sesostris III could have been 1882 or 1883 B.C. which coincides with the Biblical record and the secular conclusions we discussed in Chapter 7.

Another calculation was made by Ingman. He set forth the following table for the Sothic rising on Thoth I.³

Length of Cycle	Duration
1456 years	4226 B.C. to 2770 B.C.
1454 years	2770 B.C. to 1316 B.C.
1452 years	1316 B.C. to 136 A.D.
1449 years	136 A.D. to 1585 A.D.

In these calculations he assumes the arc of vision (B) varied from 8° in 4000 B.C. to 9° in 2000 A.D. Thus, B would have been about 8.4° in 1316 B.C. He furthermore assumes the viewing took place at Memphis (latitude 29.9°).

If his computation is correct, the Thoth I Sothic Festival could have been celebrated in 1316, 1317, 1318, or 1319 B.C. If the arc of vision was the few tenths of a degree from 8.4°, the celebration could have occurred a few years later and embraced the year 1322 B.C., which upon calculation agrees with the Biblical data. Moreover, if the viewing had taken place in Tanis at latitude 31°, the year 1316 would have shifted a few years later to approximately 1322 at B = 8.4°.

From the above notes it is obvious that if the secular record's date of A.D. 139 for a Thoth I Sothic rising is used as a basis for calculation, and if the anniversary of the Sothic rising is figured at 1460 years as Breasted, Wheeler, and Finegan have done, then exact agreement with the Bible is obtained.

If the computations of Edgerton, Ingman, and others are used, an exact secular date cannot be obtained because of lack of knowledge concerning the arc of vision employed and the latitude of the city from which the viewing took place. However, the range of possible dates based on the data supplied by these latter men gives complete assurance that the Biblical date 1888 B.C., as the first year of the reign of Sesostri III, is tenable.

From the above evidence it seems entirely feasible that the earlier computation of Breasted, Wheeler, and Finegan for a Thoth

I rising in 1322 B.C., as based on a similar rising in 139 A.D., is dependable. Thus, the seventh year of Sesostris III would have been 1882 B.C. and his first, 1888 B.C.

¹ W. F. Edgerton, "Chronology of the Twelfth Dynasty," in *Journal of Near Eastern Studies* (Chicago, University of Chicago Press, 1942), pp. 308-309.

² *Ibid.*

³ M. F. Ingman, "The Length of the Sothic Cycle," in *Journal of Egyptian Archaeology* (pub. by Egyptian Exploration Society, London, 1969), p. 39.

Appendix VII

MERNEPTAH'S REIGN

A second solution is possible. If Merneptah's statement that Israel is without seed were actually written one, two, or three years after the murder of the sons of Gideon, and there is at least a possibility that this is so, and during this period Israel was still in a state of anarchy, then Merneptah's first year could have been two or three years later and the first year of Rameses II would have been 1276. This year is one of the five possible as his first year. Until additional information is obtained relative to the time of Merneptah's accession, either date of 1279 or 1276 must be considered to be concordant with the Biblical date of 1207 for the death of Gideon. For the moment, the date 1279 appears the more logical of the two. In any case, the Biblical date provides the possibility of far more accurate dating of Rameses II's reign than anything that has been available strictly from the secular record.

Appendix VIII

FURTHER DISCUSSION ON RADIO CARBON DATING

While we have called attention to some of the frailties inherent with radiometric dating, this does not mean that dating by such methods is to be considered a lost cause. Our desire has been to make certain we do not allow assumptions to prevail which give conclusions contrary to that permitted within a Biblical framework. We have emphasized, for example, the presently extremely fragile basis for using Ar 36 as a help in potassium argon dating.

The carbon 14 analysis of this volume is based upon certain assumptions. We believe that a number of these are very valid while some are less trustworthy. We believe we must accept the present information regarding the physics of C14 (half life method of formation, etc.), but the Biblical dates for Noah's flood and the creation of Adam must be considered even more trustworthy. Therefore, some of the other assumptions in the application of C14 to dating organic material must be less reliable. A brief discussion of the most important assumptions follows.

1. Equation 1 ($T = 1.4R - 1100$) gives the approximate relationship between the true age and radiocarbon age for events which occurred before 250 B.C. Is this a trustworthy equation? Enough historical dates from the period 2000 B.C. to 250 B.C. are available to assure that this equation is approximately correct. If it is substantially correct, it clearly shows that C12 had been increasing during the several thousand years before Christ. It would have to be radically changed to effect the conclusions of this chapter. One of the major results of using the equation is that it shows that probably substantial quantities of C14 were deposited on the earth during the flood. If later investigation should show that such deposition of C14 from deep space was an impossibility, it would appear to indicate that a much more careful look has to be given to the period from the flood (4990 B.C.) to the earth's division (about 3000 B.C., see Appendix IV). It is during this period of time immediately after the flood that

we have maximum changes in the earth. We have no present assurance that Equation 1 applies to a period earlier than 3000 B.C.

2. We have provided calculations based on an estimate of 72% full C14 reservoir. If later refinements should change this up or down by a few percentage points, our figures will be slightly modified, but the conclusions should not be altered. There is no evidence now appearing on the horizon that would show a 100% full reservoir. Should that ever be shown to be the case, the calculations of this chapter would require substantial change. (See Appendix XI for further discussion of this.)

3. We have calculated the pre-flood and post-flood CO₂ and temperature conditions using several assumptions which could be erroneous.

a. We have assumed the pre-flood oceans to be about one half the volume of our present oceans. If this figure changes substantially, it should not effect the conclusions offered in this chapter.

b. We have assumed, using Dr. Plass's estimate, that if there is an increase of CO₂, the ocean carbon would increase one half as fast as the land and atmospheric carbon. It is doubtful whether Dr. Plass envisioned CO₂ changes as drastic as those set forth in this chapter. As we have seen, the carbon inventory of the earth before the flood could have been on the order of 10.5 g/cm. But if the ocean volume, where most of the carbon resides, were only on the order of one half as great as it is now, the impact on the world of this much carbon could be great. The C12 saturation level of ocean water must be considered; the pH content which is a factor of the CO₂ in solution and which is directly related to marine life must also be considered. It could well be that C12 content of the oceans was not approximately doubled as we have suggested but that the increase was considerably less. Then, of course, the atmospheric C12 and the land C12 would have been substantially greater than the four times the present which we have estimated in this chapter. Such increases in atmospheric and land carbon would accord very well with the other conclusions of this chapter relative to pre- and post-flood temperature differentials and pre-flood plants and animal abundance.

4. We have assumed that a radiocarbon date of 12,000 B.P. (10,000 B.C.) is a record of the flood of 4990 B.C. Perhaps a radiocarbon date a thousand or more years older should be more

nearly the radiocarbon date for the true flood date of 4990 B.C. It does not appear that a date older than 13,000 B.C. would be reasonable. In any case, whether a radiocarbon date of 13,000 B.C. or 10,000 B.C. is used, the conclusions offered in this chapter are modified in a small degree but they are not substantially changed.

Appendix IX

TREE-RING DATING

In 1969 it was reported that tree-ring specimens had been found which provided a continuous record back to 5000 B.C.¹ By the year 1972 five tree-ring specimens had been integrated into a tree-ring chronology dating from the period 5000 B.C. to about 6200 B.C.² By the year 1983 additional specimens had been found which seemed to fit into the tree-ring chronology of this period, back to a date of 6700 B.C.

However, because the flood occurred in the year 4990 B.C., it would be impossible for a tree-ring specimen to have remained *in situ* through the flood. Therefore, the earliest specimens that can be found and integrated into a tree-ring chronology must be dated no earlier than 4990 B.C. Thus, it would appear that the tree-ring chronology must be restudied with this in mind. Obviously various assumptions are introduced when cross dating of a living tree with a dead tree is attempted. Yet this is the means by which dating has been extended back to a year far earlier than the approximate year 2600 B.C., which is the earliest year for a live tree. Because we know the dating of the Bible is absolutely accurate, we know that these assumptions have introduced error into the attempts to date older dead trees by cross dating methods.

¹ Ferguson, C. S., 1969. A 7104 year annual tree-ring chronology for bristlecone pine, *Pinus ariatata*, from the White Mountains, California, in "Tree Ring Bulletin," vol. 29, nos. 3-4.

² Ferguson, C. S., 1972. Dendrochronology of Bristlecone Pine prior to 4000 B.C. in "Proceedings of the 8th International Conference on Radiocarbon Dating," vol. 1, Organizing Institution, The Royal Society of New Zealand, Civic Centre, Lower Hutt City, Wellington, N.Z, p. 22.

Appendix X

THE DECAY/PRODUCTION RATIO OF C14

Lingenfelter concluded in 1963 that the decay ratio was approximately 1.8 to 2.5. This equals 72%, which is the figure used in our model.¹ Subsequently he arrived at a possible decay-production ratio close to unity.² This was based on Dr. Libby's proposal that 0.5 C14 atoms per second per cm² are taken out of the exchange inventory by sedimentation.² Dr. Libby arrived at this figure on the assumption that 1×10^{10} metric tons of calcium carbonates are deposited as ocean sediments each year.³ He apparently derives these figures from the conclusions based on a study of a number of ocean sediment cores taken in the Atlantic Ocean.⁴ This article postulates that the rate of Atlantic Ocean floor sedimentation is $2\frac{1}{2}$ cm per 1000 years. It further declares that the cores gave evidence of sediment deposition over a period of some 175,000 years or longer.

The conclusions derived from the study of these ocean cores are highly speculative. No recognition is given to the flood of Noah's day, which would have deposited large quantities of ocean floor sediments. No recognition is given to the continental division that occurred about 3100 B.C.

Finally, in arriving at the figure of 1×10^{10} metric tons of calcium carbonate deposited annually on the ocean floor, the assumption is made that this is a 35% part of all the sediments deposited.³ This, then, implies that the total deposition of sediments equals about 3×10^{10} metric tons of all sediments. Clark⁵ has estimated that the rivers contribute to the sea each year 2.73×10^{15} grams (2.73×10^9 metric tons) of dissolved solids. In other words, the figure of sedimentation squalling 3×10^{10} metric tons each year appears to be at least 10 times too great, even if we assume all that went into the ocean solution eventually ended up as sediment. Since ordinarily the oceans are not saturated, the amount of chemicals eventually becoming sediment is much smaller than 2.73×10^9 metric tons.

Thus, the amount of C14 being taken out of the exchange reservoir by sedimentation must be considerably less than 0.05 atoms

per second per centimeter. This number is so small that it hardly need be considered in view of the inexactness of this whole science.

This means that Lingenfelter's model⁶ should probably disregard the sedimentation rate in computing the decay rate of Carbon 14. The decay rate should then equal 13.56×8.3 equals 112.5 dpm/cm² or 1.875 dps/cm². Using the revised figure of 2.2 ± 0.4 dps/cm² for the production rate, we discover that the decay rate is 85% of production. Our figure of 72% as proposed in our model may be a bit low. However, even if a figure of 85% for the decay-production ratio were used, the essential conclusions of our model would remain substantially unchanged.

NOTES

¹ H. E. Suess, "Secular Variations of the Cosmic-Ray Produced Carbon 14 in the Atmosphere and their Interpretations," in *Journal of Geophysical Research*, Vol. 70, 1966, p. 5946.

² Lingenfelter, R. E. and R. Ramaty, 1970, Astrological and geophysical variations in C14 production in "XII Nobel Symposium volume entitled Radiocarbon Variations and Absolute Chronology," I. U. Olsson, editor, John Wiley & Sons, New York.

³ Libby, W. F., 1965, Radiocarbon and Paleomagnetism in "Magnetism and the Cosmos," NATO Advanced Study Institute on Planetary and Stellar Magnetism, American Elsevier Publishing Co., Inc., p. 64.

⁴ Erickson, D. B., Ewing, M., and Wollin, G., 1964, The Pleistocene Epoch in Deep-Sea Sediments in *Science*, vol. 146, p. 723.

⁵ Sverdrup, H., Johnson, M. S., and Fleming, R. H., 1942, "The Oceans," Prentiss Hall, Englewood Cliffs, New Jersey, p. 214.

⁶ Lingenfelter, R. E. and R. Ramaty, 1970, Astrophysical and geophysical variations in C14 production in "XII Nobel Symposium volume entitled Radiocarbon Variations and Absolute Chronology," I. U. Olsson, editor, John Wiley & Sons, New York.

Appendix XI

C14 CONTENT IN FOSSILS

In our study we have insisted on the following conclusions relative to C14 production.

1. C14 production began about 13,000 years ago in the year 11,013 B.C. on the fourth day of creation when the light bearers were created.
2. The fossils and fossil fuels such as coal and oil were formed chiefly as a result of the cataclysmic flood that struck the earth in Noah's time some 7000 years ago.
3. Because the specific activity of carbon just before the flood was about one half of that which exists today, it would appear logical then that all fossils should show a present C14 date of about 12,000 years.

In the face of the above assertions one wonders why all fossils and fossil fuels such as coal and oil do not show this date by their C14 content. Many of them do, as we showed in Chapter 13, but a larger number of them do not. Many show trace amounts of C14 and many do not show any C14. How can this problem be resolved?

Dr. Melvin Cook, Professor of Metallurgy at the University of Utah, tackles this problem by suggesting that possibly:

the biosphere was effectively 'fluxed' with a several hundred fold increase in total carbon, mostly entirely free from C14, providing a means of diluting the radiocarbon content by ion exchange in the heated slurry that perhaps generated the coal and oil.¹

In analyzing the possibility of ion exchange in materials containing carbon, he declares:

In chemisorption and even strong 'structural adsorption' of an adsorbate on an adsorbent with atoms in common there is always a chance for atom exchange between the adsorbate and adsorbent. This possibility has been considered in radiocarbon

dating; there are several circumstances where it definitely occurs and evidently others where it is almost certain to occur. For example, anomalies found in dating mollusk shells from river waters (Keith and Anderson, 1963) may be cited (several other references were cited in this article). Kovalyenko (1964) found that the thermal decomposition of calcite had an activation energy of about 40 kcal/mol when decomposed under flowing nitrogen, but when the gas stream contained CO_2 at various partial pressures, the activation energy was raised to 160 kcal/mol (due apparently to blockage by chemisorbed CO_2) and the rate fell off progressively as the partial pressure of CO_2 was increased. Moreover, thermal decomposition of calcite involved induction times due to the chemisorbed film of CO_2 . The mechanism of decomposition was thus explained by taking into account CO_2 adsorption with a heat of 120 kcal/mol. Therefore, C12 and C14 exchange should occur on calcite. Furthermore, the chemisorption of CO_2 on charcoal should involve carbon exchange, a process that sometimes occurs at a finite rate even at ambient temperatures when the adsorption potential is high.

Keith and Anderson found that modern mollusk shells were very deficient in C14, and even gave radiocarbon ages of 1010 to 2300 years. They found also errors in measured radiocarbon ages in these and other specimens from river water sometimes as large as 3000 years. This is most likely due to carbon exchange with CO_3 derived from CaCO_3 deposits. Considerations given later in this chapter concerning the salt balance of the Great Basin indicate that Lake Bonneville disappeared only about 2000 years ago, interestingly enough, at a time coinciding with a persistent Indian legend which also described the nature of the disappearance of Lake Bonneville. If this were not true, such radiocarbon age determinations as those for Danger Cave (Libby, 1955) involving charcoal specimens dating around 11,500 years ago and those described by Broecker and Orr (1961) for samples taken from the shores of fossil Lake Bonneville, showing radiocarbon ages around $1-2 \cdot 10^4$ years, must be considered anomalous. Danger Cave, for instance, occurs on the shore about 100 feet above the present level of Great Salt Lake, and would, therefore, have been under several hundred feet of water 2000 years ago. Exchange C14 and C12 in samples by fresh water action would probably always have the effect of diluting the C14 in specimens where this exchange is possible, because the exchange would most generally involve carbonate deposits that contain no C14.²

Since ion exchange apparently does take place in some instances, the potential for such occurring during the flood and during continental division must have been very great. We cannot escape the conclusion that the huge and cataclysmic forces at work during these fantastic events would have thoroughly disrupted any evidence of uniform development of the earth's crust.

NOTES

¹ Melvin A. Cook, *Prehistory and Earth Models*, London, Max Parrish and Co., 1966, p. 206.

² *Ibid.*, pp. 3-4.