



EARTH'S CATASTROPHIC PAST

GEOLOGY, CREATION
& THE FLOOD

VOLUME 1

ANDREW A. SNELLING

EARTH'S CATASTROPHIC PAST GEOLOGY, CREATION & THE FLOOD VOLUME 1

by Andrew A. Snelling

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FOREWORD

Three great worldwide events are mentioned in the first eleven chapters of Genesis, which contain the history of early earth. The first is the creation of all things, in a completed, fully-functioning, “very good” state, as related in Genesis chapter one. All of nature was in harmony, with no death, disease, or carnivorous activity among living things, and no tectonic or meteorological disturbances in the earth itself. This harmony was disrupted when creation rebelled against the Creator, disobeying His commands. The curse of Genesis three impacted every thing and every system in creation. Indeed, the entire creation groans under the penalty of this rebellion. Finally, the rebellion culminated in a great convulsion of nature in Genesis six through nine, a massive flood that judged the planet. Not only was this a watery cataclysm, but a tectonic wrenching of the once peaceful environment.

Where could one go and not see evidence of creation? If God created it all, all things would bear His fingerprints. If He created it all, every rock, every life form, every system we study must give evidence of this recent creation. We observe intricate details in living things and rightly give Him credit for His creative majesty. At every level we look, we see a transcendence of design, far beyond the reach of mere chance. We see the flagella of bacteria, we see the interdependence of organs, the balance of ecology, fine-tuned interaction between stellar bodies. “All things were created by him, and for him” (Colossians 1:16). Nothing we could ever observe could be fully and correctly explained without creation. Our object of study might be far removed from the original creation, but all things ultimately derive from what transpired in Genesis one and two.

Likewise, where could we go in this universe and not see evidence of His universal judgment of sin? We read in Genesis three that due to Adam’s rejection of God’s authority, the plants were cursed, and the animals also, the serpent more than the rest (Genesis 3:18, 14). Furthermore the physical realm was cursed, as we see in Genesis 3:17. All of this had been placed under Adam’s dominion, and his failure passed to all his domain. Finally, Adam and Eve tasted God’s justice, as pronounced in Genesis 3:15-19. Indeed, “the wages of sin is death” (Romans 6:23), death in every aspect of creation. All we observe participated in the curse, or descended from that which did so participate.

The final great worldwide cataclysm was the great Flood of Noah’s day. Described in no uncertain terms as global in extent, it covered the world. Certainly not a tranquil flood, it conquered the entire surface of the world, destroying all

evidence of civilization, altering all ocean and atmospheric currents, eroding rock, depositing sediments, uplifting mountains, burying remains of plants and animals, etc. Nothing survived and nothing escaped its devastation, except those preserved on the Ark and some water-dwelling organisms. Where could we venture on planet earth and not encounter a flooded terrain? All things would bear the signature of death and destruction of this great Flood, whereby the world that then was, perished (2 Peter 3:6).

So now as we do our scientific study of earth's history, we find three curtains drawn, hindering a clear view. We can see the faded remnant of a once-perfect creation, marred by sin. To be sure, many aspects are still quite stunning, but how much are we unable to see? When we gaze upon creation's grandeur, we wonder how much more it must have been, for its ruination to look like this.

Our experience is only in the present; we cannot imagine a world where our bodies don't wear out. We observe the effects of sin everywhere, as we see everything grow old and wear down. How tightly the universal "watch" must have been wound, for it to have run down for so long and still be working. How could a distorted cosmos run so smoothly?

The most recent "curtain" is that of the great Flood. Can our eyes or even our minds truly understand? The entire world has been so twisted. Can we put it back together even in thought experiments? The world before the one we experience must have been so different. Even with a great deal of care and knowledge, can it be reconstructed? Certainly "the present is not the key to the past."

But still we must try, doing our best work. God is honored and pleased as we attempt to "think His thoughts after Him." The Christian's faith is strengthened as sight is clearer. God's Word more fully unfolds as problems are solved. The skeptic is challenged to consider a better worldview as he sees it make sense.

Dr. Andrew Snelling has done his best work on this volume elucidating *Earth's Catastrophic Past*. A man of deep scholarship and much faith, God prepared him for this job. He stands on the shoulders of giants, who stood against the tide in years past, and erects an even firmer structure. Modeled loosely after the groundbreaking and God-honoring book *The Genesis Flood*, it adds insights gained from decades of work by numerous individuals.

He starts from a position of biblical inerrancy, and delves deeply into geology. Early chapters weave a careful scriptural case for the Flood's catastrophic nature and global extent. He answers questions many people have about that Flood and the Ark of Noah. From that firm foundation, he ventures into the world of geology.

Intervening years have witnessed a revolution in geology, largely due to the

impact of *The Genesis Flood*. After being stifled for two hundred years of staid uniformitarianism, many earth science professionals have turned to dynamic catastrophic processes to explain the earth, thus there are many new ideas and much new data to include. Our minds have been expanded by witnessing numerous local catastrophes, and they help us comprehend the unseen global cataclysm. We stand on the verge of an even greater restructuring of geologic thought, and this treatise will certainly play a part.

But there are more weighty things to consider than geology, things of even longer durations and more significance, and this book can help us comprehend them. The creation will be made new as the curse is repealed, and it will forever fulfill the Creator's intent. Best of all, we are offered a home in it. For too long, geologic interpretations have been used to doubt and disbelieve, and with treatment, we have a better understanding than ever. I pray God will honor this book in the way He did its forerunner, and that He will be pleased.

Dr. John D. Morris
President, Institute for Creation Research

PREFACE

Any project of this magnitude has to have had a history behind it. And this project certainly does! Many people have provided help and encouragement along the way.

As a young Christian, I became interested in geology at nine years of age. It wasn't long before I struggled with the issue of how to relate the geology I was reading in the textbooks with what I was reading about in God's Word concerning creation and the Flood. During my teenage years, my parents obtained for me and I read *The Genesis Flood* by Drs. John Whitcomb and Henry Morris. That book convinced me that God's Word provides the only reliable basis for understanding geology. This was the foundation for my calling into full-time creation ministry after I had completed my university training and gained professional experience working in the mining industry. I am indebted, like so many others, to Dr. Whitcomb and Dr. Morris for this landmark book that stood unashamedly on the authority of God's Word. Many lives have been changed for eternity as a result of that book. They need to be continually acknowledged for the foundation they laid for the modern creation science movement.

After I worked with Ken Ham in creation ministry in Australia for several years, Ken and his family were released by the Australian ministry to work with the Institute for Creation Research, founded by Dr. Henry Morris in 1970. As part of his duties at ICR, Ken participated in tours to the Grand Canyon, led by ICR's geologist Dr. Steve Austin. Ken realized that I might benefit from a visit to ICR and a trip to the Grand Canyon, at least if only to "broaden my horizons" and increase my geological knowledge. So he "twisted the arm" of Dr. Steve Austin.

Thus I first came to visit ICR in 1990, where I met all their scientists, and participated in a Grand Canyon tour. The following year I was invited back to their next Grand Canyon tour, "graduating" from the bus trip to one of the hiking groups. I was graciously received by ICR and its scientists, and greatly benefited from the interaction with them and with other scientists ICR had invited to be involved in their Grand Canyon tours. As a result, I was invited to join a research group looking into how a model of catastrophic plate tectonics could provide the framework for understanding geology within the context of the Genesis Flood. The insights provided by Drs. Steve Austin, John Baumgardner, Kurt Wise, Russ Humphreys, and Larry Vardiman were extremely stimulating and beneficial to my growing understanding of how the geological evidence can be fully reconciled

with the clear teaching of God's Word. My friendship with them all, and with Dr. John Morris, grew.

For some years Dr. Henry Morris had evidently been keen for an updated and revised version of his landmark book with Dr. John Whitcomb, *The Genesis Flood*, to be written. However, he did not feel able to accomplish that task, preferring to see a younger person (or persons) with up-to-date geological knowledge tackle the project. To my surprise, during one of my visits to ICR en route to the Grand Canyon, Dr. Morris drew me aside and asked me if I would be willing to take up this needed assignment. Needless to say, I felt honored and overawed. I was also somewhat embarrassed, as I am to this day. After all, my good friend, colleague, and mentor, Dr. Steve Austin, should have been the one to write this book! I freely acknowledge that I have learnt so much from Steve, and this book has greatly benefited from his carefully researched work and publications.

Back in Australia, I tried to find the time to make a start on this daunting book project. However, it wasn't until God opened the door in 1998 for me to work for ICR that this task began in earnest. My good friend Dr. John Morris graciously invited me to join the staff at the Institute for Creation Research, with one of my main duties being to work on this book project. It also meant I could spend more time alongside Steve Austin, both on Grand Canyon trips and in teaching for ICR's Graduate School. In preparing to teach eager graduate students, I needed to review the latest geological textbooks on a number of subjects that were highly relevant to the task of writing about how geology, understood in the light of God's Word, fits the biblical framework of earth history.

By this time ICR had called together a group of scientists to research the issue of radioisotopes and the age of the earth. Headed by ICR's Dr. Larry Vardiman, this RATE research group consisted of Drs. Steve Austin, John Baumgardner, Russ Humphreys, Don DeYoung, and Gene Chaffin, and later included Dr. Steven Boyd. That eight-year research effort, of which I was privileged to be a part, yielded results that would become an important part of this book. I am indebted to these scientists for their friendship and their work. During this time, progress in writing the book was sporadic, but I was spurred on by my friends Dr. John Morris and Dr. Larry Vardiman, and by Dr. Henry Morris, of course.

So this book has finally come to fruition, after more than a decade of effort interspersed with other duties. It was a great relief to finally submit the completed manuscript to Drs. John Morris and Henry Morris III for ICR to publish. Our only regret is that Dr. Henry Morris is not here to see the final product, the realization of his dream. It would nevertheless be my prayer that this book fulfills his wishes and successfully builds on the foundation he faithfully laid.

Many people have contributed to this book and they must be acknowledged. Indeed, this book would never have been written if I had not had the benefit of

the encouragement and support of so many, as well as their prodigious, robust research. Thus I acknowledge the work of Drs. Steve Austin, John Baumgardner, Kurt Wise, Russ Humphreys, and Larry Vardiman, and that of Mike Oard and John Woodmorappe. Mark Armitage has been a tireless helper, supporting and collaborating with me in my own research effort. I would also acknowledge the careful work done by Adventist scientists and colleagues Drs. Ariel Roth, Art Chadwick, Leonard Brand, Elaine Kennedy, and Harold Coffin. Their outstanding research has proven very beneficial. Of course, I apologize if I have forgotten anyone else who should be given an honorable mention here, as there are many others whose work I have interacted with along the way.

There are also many who have encouraged, supported, and helped me with this project. In particular, Drs. John Morris, Larry Vardiman, John Baumgardner, and Kurt Wise have faithfully kept me on task and assisted in various ways. On practical matters, I would like to thank Lawrence Ford and his team at ICR for their work on turning my manuscript into this book. I know that Drs. John Morris and John Baumgardner very helpfully reviewed the manuscript. Dr. John Morris is thanked for writing the Foreword. However, any remaining blemishes in this book remain my responsibility. In terms of practical support, though, I must acknowledge my personal assistant of more than 20 years, Laurel Hemmings. As she has done with so many other projects, she typed the manuscript, corrected it many times, and drafted the diagrams. Without her faithful and tireless help, the final book would not have been possible.

My family has always stood behind and with me, through all the highs and lows in such an enormous project as this, as well as with my wholehearted participation in creation ministry over more than 25 years. My three (now adult) children, Philip, Peter, and Rachel, have had to cope with an often absent father—on many ministry and research trips, and during many hours locked away in my office. Yet we have still had many memorable family times together. It is a constant source of overwhelming joy that they are walking with the Lord and now fulfilling His callings on their lives. However, it is my loving wife, Kym, who has faithfully and tirelessly worked, supported, and coped with me for more than 33 years, following with me the Lord's leading. She has believed in me through all the trials, raised a family, and endured all the highs and lows we have had to go through together. She has truly been God's "helpmeet."

Finally, without God's sovereign grace in my life, calling me to Himself, I would not have been equipped and sent by Him into the creation ministry. It is all His work with this marred piece of clay. All praise must go to Him—Father, Son, and Holy Spirit—as our Creator. Furthermore, because God the Son, Jesus Christ, willingly laid down His life for me, no sacrifice I can make could ever be large enough to repay the debt I owe Him. And without the light of God's Word, both His written Word and the Word incarnate, Jesus Christ, we would all be in darkness and unable to understand who we are and the world in which we live.

Without God's grace, mercy, and salvation, we would not have an eternal hope of living for eternity with Him. As I dedicate this book to Him, it would be my prayer that He might somehow use the book to draw many other people from darkness into the glorious light of His kingdom. All praise and glory be to our triune Creator God!

Dr. Andrew A. Snelling
Director of Research, Answers in Genesis

INTRODUCTION

Why Take Genesis Seriously?

The first eleven chapters of the Bible have been relegated by many professing Christians today to the category of myths or stories, not real history. These stories are said to *contain* spiritual truth, but they cannot be taken seriously as records of real people and real events.

The sad reality is that while many sincere Christians who thoroughly believe the Bible and attend conservative, evangelical churches would dismiss the above statements as false, they do not know what their pastors believe about the historicity of Genesis. And what about those seminary professors charged with training pastors-to-be? Is it safe to assume that these men believe in the following truths?

1. God created everything in six literal 24-hour days.
2. Adam and Eve were real people.
3. God cursed a perfect world as a judgment for Adam and Eve's sin.
4. Noah constructed an Ark by which two of every kind of air-breathing, land-dwelling animal were saved along with Noah's family from a global, mountain-covering flood.
5. The confusion of languages at the Tower of Babel produced the people and language groups that are found around the world today.

To the shock of Bible-believing churchgoers, an alarming number of Christian leaders and teachers instead believe that God "created" through evolutionary processes (with or without His direct input) over millions and even billions of years, that Adam and Eve are the names of a human pair who descended from a hominid population and into whom God placed the human spirit, and that there has never been a global flood in human history, suggesting that the account of Noah and the Ark is just a story adapted from a Babylonian myth about some terrifying local flood in the Mesopotamian region.

How did we arrive at such a sad state of affairs? While there have always been those who have held dissenting interpretations, mainstream Christian orthodoxy regarded the opening chapters of Genesis as just as real and reliable as the rest of the Bible until 150 to 200 years ago. Even during the early decades of the twentieth century, most devout churchgoers would have been labeled as Bible-

believing and conservative, if not evangelical. So what has happened to bring about such a radical shift in Christian belief about the early history of the universe, the earth, and man?

Any analysis of intellectual movements within and without the church would quickly conclude that this downgrading of the early chapters of Genesis has coincided with the rise of uniformitarian philosophy as the cornerstone of modern geology and of the theory of evolution as the core of modern biology. Technological advances in the wake of spectacular scientific discoveries have brought about better living conditions and health standards, along with higher levels of education at all strata of society, not just in the Christianized West. In the last half of the twentieth century, the incredible development of television, computers, and satellites that orbit the earth has produced an explosion in mass communication of knowledge and technology, catapulting the world into a global society. There seems no end to what man can achieve!

In this apparent utopia, supposedly built because of man's knowledge and the technology that has been spawned by it, scientists and technologists became highly respected. Their views were popularized amongst the masses, so that millions of years of geological ages and the evolution of all life forms including man have been taught and accepted as established facts. The widespread availability of public and private education, staffed by several generations of teachers who in their youth imbibed uniformitarianism and evolution as scientific fact, has been the dominant force in this indoctrination.

Christians have not been immune from this almost universal indoctrination, and like the proverbial frog slowly boiling in the pot of water on a stove, most have been blithely ignorant of the process that has gradually changed their thinking and thus their whole approach to the Bible. Consequently, an increasing number of Christian churches throughout the world reject the early chapters of Genesis as reliable history, resulting in all manner of compromise intended to force geological ages and organic evolution into the Scriptures. While there are those who have resisted this trend, many Christians have shelved this apparent conflict between the Bible and science (so-called) as being divisive, too difficult to resolve, and/or totally irrelevant to the Gospel at the heart of the Christian faith.

Genesis as Reliable History

Yet the conflict over whether the early chapters of Genesis should be taken seriously as reliable history still rages in the church. There are those who have not capitulated to the teaching of a multi-billion-year-old earth and the evolution of all life, as facts. What makes this conflict sharper and more intense is that in the ranks of those Christians who have not compromised are many scientists with doctoral degrees. These scientists have been through the modern education system, sat under professors of the uniformitarian and evolutionary worldview,

and yet remained unwavering in their commitment to Genesis as literal history. Some that began with a uniformitarian/evolutionary worldview later rejected it after being challenged by the scientific evidence supporting the Scriptures in opposition to a multi-billion-year earth and organic evolution, and/or by a spiritual conversion and personal transformation brought about by yielding to the Creator God of the Bible and the claims of Jesus Christ.

During the last 150 to 200 years, many have sought to remain faithful to the Bible as the Word of God, accepting Genesis as reliable history. There were even organizations and groups that formed as rallying points for the faithful few who wanted to take a public stand and try to stem the tide sweeping into the church and society as a whole. However, it was the publication of the book *The Genesis Flood: The Biblical Record and Its Scientific Implications* by theologian Dr. John C. Whitcomb and hydraulic engineer Dr. Henry M. Morris in 1961 that catalyzed the young-earth creationist cause in a major way.

The Evolution Protest Movement (now the Creation Science Movement) in Great Britain, with a long history already, received a boost from the widespread circulation of that book. It was also the impetus for the formation in 1963 of the Creation Research Society, which now boasts a membership of over 600 individuals with graduate degrees in science. The Bible-Science Association (now Creation Moments, Inc.) was formed soon afterwards in 1964.

The Institute for Creation Research began in 1970 as a division of Christian Heritage College in San Diego, but moved to its own facilities in April 1972. Unlike previously formed creationist groups and organizations, the Institute for Creation Research employed scientists with Ph.D.s to work full-time in creation research, writing, and teaching. This proved to be a catalyst for many new creationist books and publications covering the relevant issues in the full gamut of scientific disciplines. The circulation of these books and publications began to impact churches and Christians not only in North America, but around the world. Other creationist groups and organizations were subsequently formed in the following years so that today there are creationist groups and organizations in all corners of the globe.

So why would hundreds, indeed thousands, of highly-trained scientists not only believe Genesis to be reliable history, but base their scientific research on the details and implications of that history? Their acceptance of the Bible in its entirety as a record of the true history of the world stems first and foremost from their Christian convictions.

Of course, the Bible never claims to be a textbook on history or science, but it does claim more than 3,000 times to be a direct communication from the God who tells us that in the beginning He created the heaven and the earth, prepared a home for man, and then created man, all in six days. If God is who He claims to

be, then He has always existed and has all knowledge and power. He is perfect, so He never makes mistakes. He is pure and honest, so He never tells lies. Therefore, if the Bible is the Word of God, then it must be truthful in its entirety, even when it touches upon matters of history and science. Otherwise, this Creator God is a liar and not who He claims to be. The very character of God requires the first eleven chapters of Genesis to be a trustworthy record of real history.

The essential elements of this framework for earth history recorded in the first eleven chapters of Genesis are:

1. God created the heaven and the earth and everything in them in six literal days of approximately 24 hours duration.
2. There was a definite sequence of creative acts by God during those six days:
 - a. Day 1—the heaven and earth were created in darkness with the earth covered completely by water, and then light was created so that night was followed by daylight to complete the first cycle of a normal day.
 - b. Day 2—separation and elevation of some of the water on the earth's surface with an expanse placed between the waters.
 - c. Day 3—the formation of dry land as distinct from the ocean and the covering of the land with plants.
 - d. Day 4—the creation of the sun, moon, and stars.
 - e. Day 5—the creation of all sea creatures and flying animals, including whales and birds.
 - f. Day 6—the creation of land animals and “creeping things,” followed by the creation of Adam, his placement in the Garden of Eden and naming of the animals there, and finally the creation of Eve from Adam's side.
3. The temptation of Adam and Eve and their subsequent disobeying of God's instructions, resulting in God pronouncing the Curse of physical death and suffering upon man, the animals, and the earth, and the banishment of Adam and Eve from the Garden of Eden.
4. The growth of the human population into a pre-Flood civilization with all manner of technology that included the building of cities, metal tools, and musical instruments.
5. Because of the increasing wickedness of the pre-Flood civilization, Noah was instructed by God to build the Ark (an ocean-going wooden ship). When it was ready, two of every kind of air-breathing, land-dwelling animal were sent to go onboard the Ark with Noah and his family to escape the global, mountain-covering Flood that God was about to unleash upon the earth.
6. The Flood was upon the earth for over a year, covering even the highest mountains and destroying all the air-breathing, land-dwelling life from the face of the earth.
7. The emergence of Noah, his family, and all the animals from the Ark,

- after which they rapidly increased in numbers, being commanded by God to spread out to inhabit the revegetated earth.
8. Instead of spreading out across the revegetated earth as they had been commanded, the growing post-Flood human family again rebelled against God by remaining in one place, the plain of Shinar. They built a city and a tower in defiance of God, which resulted in God's intervention to confuse the people's languages, after which they dispersed, forming the many different language and people groups. The city was therefore named Babel.
 9. Since Genesis carefully records the genealogies and lifespans of Adam and his descendants, it can be calculated that human history covers a period of only 6,000 to 7,000 years. Yet, as already noted, the earth was made six days before Adam, at the beginning of Day 1, so the earth itself also can only be 6,000 to 7,000 years old.

The subsequent pages of Genesis recount the early history of the nation of Israel, beginning with God's selection of Abraham as the progenitor of this new nation. Few conservative Christian scholars would deny the historicity of these later chapters in Genesis. Yet many would regard the language used in the creation account as a form of ancient Hebrew poetry, even though in reality the genre throughout the first eleven chapters of Genesis is no different to that used in the remainder of the book.

So why are some scholars skeptical? Certainly not because of style and language, which are precisely the same as in other biblical accounts of historical events. No, the conflict occurs with supposedly established scientific facts that insist on a multi-billion-year-old earth and organic evolution. A choice has to be made between Scripture, which is authored by God, and modern science, which is authored by men.

Just how were these early chapters of Genesis recorded at the time they happened? Archaeologists tell us that writing was not invented until about the time of Abraham. Most liberal Christian scholars insist that the book of Genesis was written much later in Jewish history, perhaps as late as the post-Babylonian exile, derived from old traditions and stories distorted by the many years of oral transmission from generation to generation. But such claims overlook the testimony of the early chapters of Genesis, where we are told that in the pre-Flood world, people built cities, had tools of brass and iron, and made musical instruments. This denotes quite an advanced civilization.

For instance, in order to have metal tools, there must have been mines and smelters. In Genesis 5, at the end of Adam's life, the record of his genealogy ends with the expression "this is the book of the generations of Adam." There is no reason to suppose that Adam and his descendants were not able to write and keep records, remembering that in the Garden of Eden, on the sixth day of creation, Adam had

named all the animals before Eve was created from his side, thus demonstrating his intellectual capacity.

Moses, the traditionally recognized author of Genesis, simply had to compile the book of Genesis from the records kept by Adam and his descendants. Of course, Adam wasn't present when God created the world, but God was, and the text emphasizes a number of times that "God saw what He had made." Thus, Genesis reads as an eyewitness account, which is the hallmark of a reliable record of real history.

In any case, if the Creator God of the Bible is who He says He is, then not only is He capable of accurately telling us about the early history of the universe, the earth, and man, but He is capable of having the details truthfully recorded, faithfully copied, and transmitted down through successive generations.

Jesus Regarded Genesis as Real History

The eyewitness account of the life and deeds of Jesus Christ recorded by His disciple John begins by declaring of Jesus, "All things were made by him, and without him was not any thing made that was made" (John 1:3). When the disciple Peter declared that Jesus was "the Christ, the Son of the living God" (Matthew 16:16), Jesus did not rebuke him for blasphemy or for being mistaken, but instead praised him for his confession and acknowledged that God ("my Father which is in Heaven") had revealed this truth to him. Furthermore, Jesus claimed, "I and my Father are one" (John 10:30). And Jesus also claimed, "I am the way, the truth, and the life" (John 14:6). If Jesus was telling lies when He made these claims and approved of others for making incorrect claims about Him, then He is not "the truth."

That He was neither a liar nor a deceiver, but was in fact who He said He was, is substantiated by the undeniable fact of history that He rose from the dead as He said He would. As a resurrected man with flesh and bones (Luke 24:39), Jesus was seen many times by many witnesses, including 500 people on one occasion, and history records the resolute witness of millions of people who have been prepared to die if necessary for their Christian faith. Why would anyone die for a delusion or a lie? Those who have carefully examined and weighed the evidence have always come to the conclusion that Jesus did rise from the dead, and that therefore He was Who He claimed to be—Jesus Christ, the Son of God, and the Creator Himself.

So if Jesus was (and is) both the Creator God and a perfect man, then His pronouncements are always and absolutely trustworthy. Therefore, it is significant that Jesus confirmed that Moses was the author of the book of Genesis by endorsing the Jewish subdivision of the Old Testament Scriptures: "These are the words which I spake unto you, while I was yet with you, that all things must be fulfilled, which were written in the law of Moses, and in the prophets, and in the

psalms, concerning me” (Luke 24:44). Furthermore, it is recorded in the Gospels that Jesus referred directly to details in each of the first seven chapters of Genesis a total of fifteen times, as well as making an allusion to a detail recorded in Genesis 9.

For example, Jesus referred to Genesis 1:26-27 when He said in Mark 10:6, “But from the beginning of the creation God made them male and female.” In the very next verse, Jesus quoted directly from Genesis 2:24 when He said, “For this cause shall a man leave his father and mother, and cleave to his wife; and they twain shall be one flesh; so then they are no more twain, but one flesh.” The same comments by Jesus are also recorded in Matthew 19:4-6. It should be noted that Jesus confirmed the details of Genesis 1 when He said that man was created male and female “from the beginning of the creation,” not after millions of years of evolution. Five times Jesus refers to Noah and/or the destructive global Flood of Genesis 6-7 in Matthew 24:37-39 and Luke 17:26-27. One is forced to conclude that Jesus regarded Genesis as real history, and if He, as the Creator, was actually a witness to the events of Genesis 1-11, then we have absolutely no alternative but to likewise regard these opening chapters of the Bible as reliable literal history.

The Apostle Peter’s Prophecy

In the closing chapter of his final letter (2 Peter 3), the apostle Peter prophesied that there would be scoffers in the last days choosing to be willingly ignorant of the fact that by His command, God created the heaven and the earth, with dry land separated from water on the earth’s surface, and that God later destroyed everything on the surface of the earth that He had made by a global watery cataclysm. Two things should be kept in mind here. First, Peter had, of course, spent three full years traveling in the company of Jesus Christ Himself, during which time He listened to all that He had to say and was able to ask questions for any clarification. Then Peter was a witness to Jesus’ death and the physical bodily resurrection, which unmistakably confirmed Jesus’ divine credentials. It is also recorded (Acts 2) that Peter and the other disciples of Jesus received extraordinary ability and authority when they received the gift of God’s Holy Spirit with outward physical manifestations. Thus, the books of the New Testament that bear his name not only come from his pen, but have the stamp of the authority of God Himself upon them and upon what they tell us, including this prophecy.

Second, this prophecy of Peter was among the last words he wrote to all his fellow Christians before he died, and he emphasized the utmost importance of this prophecy in his preamble to it (2 Peter 3:1-3). He stated that he was writing this second letter in order to stir their minds to remember all that the prophets had spoken about, and all that the apostles had told them about the words and deeds of Jesus Christ. But then in verse 3, he used the words “knowing this first,” or as sometimes translated, “first of all.” This obviously denotes something of utmost importance that Peter wanted them to remember above everything else he had

told them. In other words, Peter placed first priority on this prophecy, which is about those who would reject the account of creation and the global Flood in Genesis 1-11 as real history.

What is quite remarkable is the explanation Peter gave as to why these scoffers would choose to reject the clear testimony of God Himself, that He created the heavens and the earth and sent a global, mountain-covering Flood, and also reject the physical evidence that these events left behind. Peter told us (2 Peter 3:4) that the hallmark of these scoffers will be their philosophy that “all things continue as they were from the beginning of the creation.” This expression that things continue as they always have from the beginning is an apt description of the philosophy of uniformitarianism, introduced first by James Hutton in 1795 and popularized by Charles Lyell in the 1830s. They argued that the “the present is the key to the past.” Thus, we can study the geological processes shaping the earth today and then extrapolate those processes and their rates back in time to explain how the rock strata of the earth’s crust, the continents, and mountains were formed and came to be the way they are.

It was on the basis of this philosophy and the principles embodied in it that the testimony of Genesis 1-11 came to be rejected, because the evidence for creation and the global Flood were seemingly explained in terms of millions and billions of years of slow and gradual geological processes. These ideas became the foundation for modern geology. The millions and billions of years provided the timescale necessary for the acceptance of the theory of organic evolution to explain the development of all life on the earth, instead of accepting that God had created it all.

While some aspects of uniformitarianism promoted by Lyell have been rejected or modified today, it is still true that modern geologists rely upon present-day processes, including gradual continental drift (or plate tectonics), to explain how the geological record and the continents themselves came to be as they are today. Because modern geology seemingly has an alternative explanation for the geological evidence, Lyell, his followers, and today’s geologists have almost universally rejected the opening chapters of Genesis as reliable literal history, thereby influencing Christian scholars to explain Genesis 1-11 as myths or exaggerated stories based on oral traditions of a vague memory of a devastating local flood in Mesopotamia that came to the Jews from their Babylonian ancestors.

However, the fact that Peter wrote such an accurate description of these scoffers more than 1,700 years before this prophecy was fulfilled puts an unquestionable stamp of authority upon this prophecy. We therefore cannot ignore the testimony of the apostle Peter in this powerful fulfilled prophecy. Peter believed that the opening chapters of Genesis were real history, and he predicted what we see today—the rejection of special creation by God and the rejection of the global Flood as an explanation of the earth’s geology, even with overwhelming scientific

evidence. This rejection is not just by unbelievers, but also by those who claim to be Christians.

The Reliability of the Whole Bible Depends on Genesis as History

It almost seems self-evident that if the reliability of the first eleven chapters of Genesis as real history is rejected, then the trustworthiness of other parts of the Bible is called into question. Indeed, it is impossible to reject the historicity and divine authority of the book of Genesis without undermining and, in effect, repudiating the authority of the entire Bible. If Genesis is not true, then neither are the testimonies of those prophets and apostles who believed it was true. In the Old Testament, for example, Adam is mentioned by name in Deuteronomy, Job, and 1 Chronicles, while Noah is mentioned in 1 Chronicles, Isaiah, and Ezekiel. We have already noted in detail the apostle Peter's testimony to Genesis, but it is significant that the first eleven chapters of Genesis, which have been the object of the greatest attacks of skepticism and unbelief, have in fact had the greatest influence on the New Testament. There are at least 100 quotations or direct references to Genesis 1-11 in the New Testament. Furthermore, every one of those eleven chapters is alluded to somewhere in the New Testament, and every one of the New Testament authors refers somewhere in his writings to Genesis 1-11.

Finally, in not one of these many instances where the Old or New Testament refers to Genesis is there the slightest suggestion or evidence that the writers regarded the events or the people as myths or allegories. To the contrary, they viewed these first eleven chapters of Genesis as absolutely historical, true, and authoritative. To underscore this, on at least six different occasions Jesus Christ Himself, as we have already seen, quoted from or made specific reference to something or someone in each of the first seven chapters of Genesis.

It can be argued that the first eleven chapters of the book of Genesis are probably the most important passages ever written. If these chapters were somehow totally expunged from the Bible, then the rest of the Bible would be incomprehensible. It would be like a building without any foundations. Genesis 1-11 gives vital information concerning the origin of so many things (and therefore their meaning) which otherwise we would never know about. The word *genesis* means "beginnings" or "origin," and so it is that Genesis 1-11 records for us God's provision of the only true and reliable account of origins, including the origin of the universe, the solar system, the earth, the atmosphere and the oceans, of order and complexity, life, man, marriage, evil, language, government, culture, nations, and religion, not to mention the origin of rocks and fossils. Thus, Genesis 1-11 is of such foundational importance to all history that without it there is no true meaning to, or understanding of, ourselves and all aspects of the world around us.

What we believe about our origin will inevitably determine our beliefs concerning our purpose and our destiny. Any naturalistic concept of our beginnings gives us

no more meaning than any other form of life or object in the universe, and so provides only a naturalistic program for the future without hope of there being anything more than what we see around us. On the other hand, an origin at the hands of an all-powerful, pure, and loving God guarantees a divine purpose in history and meaning to our existence, a future in the hands of a caring God who made us and has made provision for us and our future. Since those details progressively unfold throughout the rest of the Bible, if Genesis 1-11 is not literal history, then the reliability of the whole Bible is undermined. By not taking Genesis seriously, many Christians have in fact undermined the rest of the Bible they claim to believe and follow. They are also in danger of unwittingly accusing Jesus Christ of being a false witness, deceived, or a deceiver, and making His claims about being the Son of God blasphemy.

The Pivotal Importance of the Flood

The creation account in Genesis 1 is undoubtedly the most profound chapter in Genesis, and indeed the whole Bible, with its description of the ultimate origin of all reality around us. However, the global Flood in Noah's day is of pivotal importance in understanding the present geology of the earth. This is mirrored by the fact that the account of the Flood and its aftermath are allocated almost four chapters (Genesis 6-9), compared to the two chapters for the creation account (Genesis 1-2). Furthermore, more than any other branch of science, geology has been most affected by the philosophy of uniformitarianism. This philosophy has provided the millions and billions of years timescale that is the underpinning for the theory of evolution in biology, so that together, uniformitarianism and evolution have brought about the rejection of Genesis 1-11 as reliable history, even by Christians. It is no wonder that the apostle Peter was led by the Holy Spirit to single out the scoffers who would come rejecting the Genesis account of creation and the Flood as real history. God has left in the rocks, fossils, and living world evidence that unmistakably testifies to the trustworthiness of the Genesis record.

Therefore, our purpose in this book is to focus on the global Flood as described in Genesis, and with the scientific evidence that has convinced many today, including Christian geologists, that Genesis must be taken seriously as literal history. It is quite logical to expect that if God is who He says He is and has told us the truth in Genesis 1-11 about the early history of the earth and man, then the evidence we can observe and study in the world today should be totally consistent with what we read in the opening chapters of God's Word. Again, this is not to suggest that the Bible is a textbook of science and history, but because it is God's Word, even details of science and history must be correct. Neither is it suggested that the Bible can be proved from scientific and other evidence. To the contrary, science cannot directly observe what happened in the past, so all we can do is infer from the evidence we observe in the present. Thus, we are only entitled to conclude that

the evidence we observe today is consistent with what has been faithfully recorded for us by God in Genesis 1-11.

To achieve our stated objective, we first need to re-examine the biblical record and the details it gives that argue for the Flood being global and mountain-covering (Section I). Then we need to deal with the non-geological arguments that are often used to discount the Genesis account of the Flood as literal history (Section II), plus the arguments over Noah, the Ark, and the animals (Section III). It is important also to study the compromises with uniformitarian geology that have been made in attempted harmonizations with the Scriptures, and to discredit the feasibility of these. At the same time, it is both crucial and encouraging to know that there have always been scientifically well-qualified Christians—the equal of their peers—who have firmly stood their ground in defense of a literal Genesis. So often the appeal is made to the majority in determining whether a scientific matter has validity or not, but truth will always be truth, regardless of the majority vote, and a minority will always be significant when defending God's Word. With such matters dealt with, the next task is to build the framework for a biblical geology (Section IV).

In dealing with the scientific evidence, we first need to understand the essential “ingredients of the modern geological synthesis” (Section V). Then, the question to ask is this: If the biblical account of creation and the Flood is true, then what evidence should we look for? Asking the right question will mean that the evidence is seen from a new perspective. The description of the Flood in the biblical record implies catastrophism and utter devastation, and therefore we would expect the field data of the geological record to be in harmony with such an assessment, which is what we will examine in detail in Section VI.

Because Genesis 1-11 is a record of the true history of the earth, we also need to explore the framework it provides for understanding geology from a truly biblical perspective, as well as examining the supportive evidence (Section VII). However, the biggest obstacles to be dealt with are the perceived scientific problems with a biblical geology, including the radioactive dating methods (Section VIII) and other techniques in modern geochronology (Section IX), and geological puzzles engendered by the claimed evidence that certain types of rocks, geological processes, coal beds, oil, mineral deposits, and more can only be explained by uniformitarianism's gradualism (Section X). In all instances, the perceived problems are countered by scientific evidence itself.

Finally, the adequacy of the biblical framework of earth history is emphasized in the concluding challenges, making it relevant to Christians in our 21st-century world. It is sincerely hoped that by the end of this study, readers will have their faith restored in Genesis as real, literal history, and be convinced that the scientific evidence, correctly discerned and applied, is indeed consistent with God's record of our origins and history found in Genesis 1-11.

SECTION I

THE BIBLICAL RECORD OF THE GLOBAL GENESIS FLOOD

1

MOSES COMPILED GENESIS

The account of the Flood in Genesis 6-9 has been “one of the showpieces of literary criticism,”¹ that liberal scholarship claims is a composite of two or more traditions committed to writing more than a thousand years after the events occurred. That such views continued to be expounded even a century after they reached their zenith is preposterous, since these higher critical views were soundly refuted as early as 1895 by Princeton scholar William Henry Green.² More recent studies have independently argued for the literary integrity of Genesis 6-9,³ making continued assertions that these chapters can be dissected into two parallel accounts totally untenable.

The authorship of Genesis is, of course, closely tied to that of the rest of the Pentateuch, the first five books of the Old Testament, and there is abundant support for it being authored and/or compiled by Moses. The Pentateuch itself claims that important parts were written by Moses (for example, Exodus 24:4, 7; Deuteronomy 31:9, 24-26). Internal evidence also shows that the Pentateuch was written by an eyewitness who, for example, was obviously familiar with Egypt and Egyptian customs, names, words, and geography, as evidenced in those parts of the Pentateuch that were set in Egypt or refer to it. Furthermore, the claims in the Pentateuch for authorship by Moses are supported in the rest of the Old Testament and by the statements by Jesus Christ in the Gospels.

As early as Joshua’s day, the law of Moses was in written form (Joshua 1:7-8; 8:32,

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- 1 B. Kidner, 1967, *Genesis: An Introduction and Commentary*, The Tyndale Old Testament Commentaries, Leicester, UK: InterVarsity Press, 97-100.
 - 2 W. H. Green, 1979, *The Unity of the Book of Genesis*, Grand Rapids, MI: Baker Book House (originally published by Charles Scribner’s Sons, 1895).
 - 3 A number of studies are listed by G. J. Wenham, 1987, *Word Biblical Commentary, Volume 1, Genesis 1-15*, Waco, TX: Word Books. They are: B. W. Anderson, 1978, From Analysis to Synthesis: The Interpretation of Genesis 1-11, *Journal of Biblical Literature*, 97: 23-39; G. J. Wenham, 1978, The Coherence of the Flood Narrative, *Vetus Testamentum*, 28: 336-348; R. E. Longacre, 1979, The Discourse Structure of the Flood Narrative, *Journal of the American Academy of Religion*, 47 (supplement): 89-133; I. M. Kikawada and A. Quinn, 1985, *Before Abraham Was: The Unity of Genesis 1-11*, Nashville, TN: Abingdon Press; G. Larsson, 1985, The Documentary Hypothesis and the Chronological Structure of the OT, *Zeitschrift für die Alttestamentliche Wissenschaft*, 97: 316-333; and G. A. Rendsburg, 1986, *The Redaction of Genesis*, Winona Lake, IN: Eisenbrauns.

34; 22:8), and similar references are found in later books of the Old Testament (e.g., 1 Kings 2:3; 2 Chronicles 23:18; 34:14; Ezra 3:2; 6:18; Nehemiah 8:1-8; Daniel 9:11, 13). Jesus on numerous occasions spoke of the law of Moses, sometimes of the “book of Moses” (Mark 12:26), twice of “Moses and the prophets” (Luke 16:29, 31) or Moses, the prophets, and the Psalms (Luke 24:44), obviously ensuring it was understood that he regarded Moses as the author of the first part of the Old Testament on a par with its other major sections.

The early church, the church of later centuries, and the Jews almost unanimously accepted that Moses authored Genesis and the other books of the Pentateuch. It wasn't until the rise of “higher criticism” at the end of the 19th century that this view was questioned. The position that Moses was the author and/or compiler of Genesis is too strongly supported to be dismissed by liberal rationalism.

Of course, the claim that Moses authored the book of Genesis in particular does not assume that Moses wrote without the use of sources. Abraham came from a very sophisticated background in Ur, where all sorts of records were meticulously kept. Joseph rose to a place of leadership in a very literate society. Noah and his sons obviously had the technological ability and background to be able to build the Ark in such enormous proportions under divine guidance that there can be little doubt Noah and his family were able to keep written records. As early as Genesis 4 in the record of Adam and his descendants, we read about Cain and others building a city (v. 17), musical instruments (v. 21), and craftsmen in brass and iron (v. 22), all of which imply a civilization able to quarry, mine, and smelt rock to acquire metals in order to make tools, musical instruments, and build cities. Such a civilization is more than able to keep written records.

Furthermore, the recurring phrase “these are the generations of . . .,” which occurs in eleven places through the book of Genesis, appears to give a clue that family records may have been kept by successive patriarchs. Wiseman⁴ has interpreted this recurring phrase or refrain as a colophon, an identifying phrase at the end of a cuneiform clay tablet, which could be translated “these are the historical origins of. . .” In other words, the phrase always marks the conclusion of a section, rounding off the archives presumably written or kept through the years by the signatory, for example, Adam (Genesis 5:6) and Noah (Genesis 6:9), resulting in a growing series of clay tablets with the family history then entrusted to successive heads of the family.

However, occasionally this phrase, translated from the word *tôl'dôt*, has been viewed as a heading of a section.⁵ Indeed, Leupold translated the *tôl'dôt* as the phrase “this is the story of,” because as a heading it summarizes the ensuing

4 P. J. Wiseman, 1936, *New Discoveries in Babylonia About Genesis*, London: Marshall, Morgan and Scott.

5 H. C. Leupold, 1980, *Exposition of Genesis*, vol. 1, Grand Rapids, MI: Baker Book House (originally published by The Wartburg Press, 1942). See F. Kiel and F. Delitzsch, 1949, *Biblical Commentary on the Old Testament: The Pentateuch*, trans. James Martin, Grand Rapids, MI: Eerdmans.

discussion, combining narrative and genealogy to trace the development of the subject from a starting point to an end.

Alan Ross concluded that the colophon view of Wiseman cannot be accepted because the evidence from cuneiform is unconvincing.⁶ On the cuneiform tablets, the colophons are titles that are repetitions of the tablet's first line and not a description of the contents. Ross argues that as a concluding statement for sections of the book of Genesis, the colophon interpretation is unworkable. Indeed, Ross points out that elsewhere in the Bible, outside of Genesis, the *tôl'dôt* does not refer to what preceded it, but in every place it occurs it can and often must refer to what follows (e.g., Ruth 4:18; Numbers 3:1). Ross thus maintains that the *tôl'dôt* heading announces the historical development from the ancestor (or beginning point) and could be paraphrased in translation as "this is what became of . . .," or "this is where it started from" (with reference to the following subject). Thus, Ross argues that each section is a narrative depicting what became of someone, the Flood account being in the *tôl'dôt* of Noah (Genesis 6:9 – 9:29).

Nevertheless, the biblical evidence strongly favors the Wiseman interpretation of these colophons. The first such colophon in Genesis 2:4 clearly refers back to the Genesis 1 account of creation, and *not* the details in Genesis 2-4. Similarly, the Genesis 5:1 colophon refers back to the life of Adam. The view of Ross, on the other hand, negates the eyewitness nature of these clay tablet records, which in turn undermines them as literal, written historical accounts.

This *tôl'dôt* structure, then, is the very fabric around which the whole of Genesis was constructed, confirming its unity under the authorship of Moses directed by the Holy Spirit. This understanding of the significance of the *tôl'dôt* provides a hint that Moses may well have utilized previously existing written documents when compiling Genesis.

Thus, the conviction here is that the opening chapters of Genesis, including the Flood account, are an integral part of Genesis, which is equally the infallible Word of God, verbally inspired in the original autographs, that is, men of God such as Moses wrote under the direction of the Holy Spirit (2 Peter 1:21). As a reliable record of the early history of the earth, the details provided in Genesis must be our starting point in investigating the geographical extent of the Flood.

Surprising as it may be to some, not all conservative Christian scholars, past and present, believe that Genesis teaches a universal or global flood.⁷ Baxter states:

6 A. P. Ross, 1996, *Creation and Blessing: A Guide to the Study and Exposition of Genesis*, Grand Rapids, MI: Baker Book House.

7 For example, J. S. Baxter, 1960, *Explore the Book: A Basic and Broadly Interpretive Course of Bible Study from Genesis to Revelation*, Grand Rapids, MI: Zondervan Publishing House; H. N. Ross, 1998, *The Genesis Question: Scientific Advances and the Accuracy of Genesis*, Colorado Springs, CO: NavPress.

Was the Flood in Noah's day universal? As to the *fact* of the Flood, the testimony of universal tradition and of 20th-century archaeology have put that finally beyond doubt: but was the Flood *universal*? ... let us clearly understand that it is not vital to the inspiration of the Scriptures to maintain that the Noachian Flood was universal.

It is indeed vital, and all the biblical arguments in favor of the Flood's universal extent should be carefully elaborated. Without exception, the commentators and scholars who maintain that the Flood was not global have drawn their arguments and evidence from science, particularly geology, forgetting that like any other human activity, science uses human wisdom to interpret the observational data and build models of, for example, what the earth was like in the past.

Rather than starting with fallible human opinion, it is crucial that we examine the question of the extent of the Flood from the wisdom and knowledge of God as provided by the Holy Spirit in the opening pages of Genesis.

2

THE DURATION OF THE FLOOD

One of the distinctive features of the Flood account in Genesis is the fullness and precision of the dates given—a precision described by Wenham as “astonishing.”¹ The only other place in Scripture with similar precision is in Ezekiel, where his prophecies are clearly dated. Thus, these dates in Genesis 6–9 should attract our immediate attention as being significant. Indeed, we are given the date when the Flood began (Genesis 7:11) and the date when the Flood ended and Noah disembarked from the Ark (Genesis 8:14), making the Flood exactly one year and eleven days in duration. This equates to 371 days, if it is assumed that the calendar being referred to functioned on the basis of twelve 30-day months in a 360-day year. That this is indeed the case can readily be established from a careful study of the chronological data in the biblical text (see Table 1). For the Flood to continue for more than a year is astounding, to say the least, but it is totally consistent with the Flood’s global extent. On the other hand, a year-long flood is hard to reconcile with the view widely held today that it was only local, confined to the Mesopotamian region. So while there may be differences of opinion as to other details concerning the Flood, there should be no dispute as to the Flood’s duration.

Forty Days of Rain

The Flood began seven days after Noah, his family, and the animals entered the Ark, and we are told in Genesis 7:11-12 that as “the fountains of the great deep” were broken up, the “windows of heaven were opened” and it rained for forty days and nights continuously and torrentially. Devastating local floods are known from recorded history to have resulted from several days of intense rain that then tapers off. However, the biblical account clearly indicates that the intense rain cascaded down continuously for forty days and forty nights, two days short of six weeks. While we can only imagine the devastation resulting from the “floodgates of heaven” (literally) opening and the water pouring down upon the earth for that length of time, it is hard to conceive from this description that the Flood was only local. With that much water falling down upon the earth and spreading out, there is no doubt that Scripture is describing a global flood. Of course, we

1 Wenham, 1987, 179.

are told that water also came from within the earth—from “the fountains of the great deep”—so the amount of water involved is only compounded to the point where nothing short of a universal flood of global extent is consistent with the biblical description.

Table 1. The chronology of the Flood*.

Period	Days
There were forty days during which the rain fell	40
Throughout another 110 days the waters continued to rise, making 150 days in all for their “prevailing” (7:24)	110
The waters occupied 74 days in their “going and decreasing” (AV margin). This was from the 17th day of the seventh month to the 1st of the tenth month (8:5). There being 30 days to a month, the figures in days are 13 plus 30 plus 30 plus 1	74
Forty days elapsed before Noah sent out the raven (8:6–7)	40
Seven days elapsed before Noah sent out the dove for the first time (8:8). This period is necessary for reaching the total and is given by implication from the phrase “other seven days” (8:10)	7
Seven days passed before sending out the dove for the second time (8:10)	7
Seven days more passed before the third sending of the dove (8:12)	7
Up to this point 285 days are accounted for, but the next episode is dated the 1st of the first month in the 601st year. From the date in 7:11 to this point in 8:13 is a period of 314 days; therefore an interval of 29 days elapses	29
From the removal of the covering of the Ark to the very end of the experience was a further 57 days (8:14)	57
TOTAL	371

* This table appears in E. F. Kevan’s Commentary on Genesis in Davidson, 1953, 84–85. As is pointed out in the discussion here, the Flood probably reached its maximum depth after the first forty days, instead of rising throughout the 150 days as Kevan indicates.

150 Days of “Prevailing”

The popular perception is that the Flood only lasted for forty days because that was the length of time it rained so intensely. However, the biblical account states three times that the waters “prevailed” (Genesis 7:18, 19, 24), the word “prevailed” in the original Hebrew conveying the meaning “were overwhelmingly mighty.”² We are also told that “the waters increased,” “the waters prevailed, and were increased greatly,” “the waters prevailed exceedingly,” and “the waters prevailed” (Genesis 7:17, 18, 19, 24) for 150 days. Thus, the forty days and forty nights of continual intense rain was only the beginning of this 150-day period. In fact, we are told in Genesis 8:1-2 that it was only after this 150-day period that the fountains of the

2 H. M. Morris, 1995, *The Defenders Study Bible*, Grand Rapids, MI: World Publishing, 23.

deep and the windows of heaven were stopped so that the rain was “restrained.” The fact that this prevailing is repeated four times in the space of eight verses is meant to emphasize what was happening. No local flood continues rising for 150 days. If this were a description of the rivers in the Mesopotamian valley region overflowing, then it is completely misleading and exaggerated, to say the least.

Leupold suggested that the Flood attained its maximum depth after the first forty days of intense rainfall and continued to maintain that level for the additional 110 days of this 150-day “prevailing” period.³ This conclusion was also favored by Whitcomb and Morris,⁴ who emphasized that in Genesis 7:4, 12 we are twice told that the rain was upon the earth forty days and forty nights, and then in Genesis 7:17 we are also told that “the Flood was [or better, ‘was coming’⁵] forty days upon the earth.” They maintain that most of the water which came through the “windows of heaven” fell in the intense rainfall of that first period of forty days and that although the “windows of heaven” were not stopped for another 110 days, the rainfall during that period may have contributed only to the maintaining of the Flood waters at their maximum height.

However, it seems just as reasonable to regard the description in Genesis 7:17-20 as implying that the waters continued to rise continually during the entire “prevailing” period of 150 days. In sequence, the account records that “the waters increased” (v. 17), “and the waters prevailed, and were increased greatly upon the earth” (v. 18), “and the waters prevailed exceedingly upon the earth” (v. 19) and “the mountains were covered” (v. 20). Leupold translates these expressions as “the waters grew mighty and mounted greatly over the earth” (v. 18), and “the waters grew extremely mighty upon the earth” (v. 19).⁶ Thus, the waters were still increasing on the earth’s surface and therefore rising.

It needs to be remembered that “the fountains of the great deep” were also open for this 150-day “prevailing” period, and that it is possible that just as much, if not more, water came out onto the earth’s surface through these fountains as the water that fell as rain through the “floodgates of heaven.” If this indeed was the case, then it is even harder to escape from the inevitable conclusion. If the Flood waters were rising continually over the space of five long months (five 30-day months = 150 days), then because water will always spread out and seek a uniform level, the Flood was of such magnitude with the quantities of water involved that the extent had to be universal and global.

3 Leupold, 1942, 300, 306.

4 J. C. Whitcomb and H. M. Morris, 1961, *The Genesis Flood: The Biblical Record and Its Scientific Implications*, Philadelphia, PA: Presbyterian and Reformed Publishing Company, 4.

5 H. M. Morris, 1976, *The Genesis Record: A Scientific and Devotional Commentary on the Book of Beginnings*, Grand Rapids, MI: Baker Book House, 199.

6 Leupold, 1942, 300.

221 Days of “Assuaging” and “Abating”

The turning point during the Flood year occurred when “God remembered Noah” (Genesis 8:1), after which “God made a wind to pass over the earth, and the waters assuaged [literally, calmed or soothed].” This happened at the end of the 150 days of the waters “prevailing.” From this point, the record tells us it took 221 days for the Flood waters to completely abate [literally, diminish, become less in amount] and for the surface of the ground to dry out sufficiently for Noah, his family, and the animals to disembark the Ark.

In reality, these time periods need to be carefully understood, for it is all too easy to miss the implications. Indeed, it is staggering to envisage that the Flood was so overwhelming, far-reaching, and gigantic as to have covered all the high mountains of the earth’s pre-Flood topography within a period of probably only six weeks, with the waters then continuing to increase and prevail over those mountains for an additional sixteen weeks, during which the face of the earth was a shoreless ocean! However, if the biblical description of a global flood which covered even the tops of the mountains for sixteen consecutive weeks (110 days) is hard to reconcile with the somewhat inadequate local flood concept, then how much harder to reconcile is the fact that an additional 31 weeks (221 days, or more than seven months) were required for the Flood waters to subside sufficiently for Noah to disembark safely in “the mountains of Ararat.”

During this period of 221 days, when the Flood waters were abating and the new land surface was drying out, there are a number of stages elaborated in the biblical narrative that are sometimes easily confused.⁷ In addition to the Flood waters abating after 150 days (five months) when the fountains of the deep and the windows of heaven were stopped, we read in Genesis 8:4 that the Ark also came to rest “upon the mountains of Ararat.” There is then a 74-day period (see Table 1) in which “the waters decreased continually” (Genesis 8:5), and at the end of that period we read that the tops of the mountains were visible. In other words, during that 74-day period, the continual rapid decrease in the water level exposed the tops of the mountains surrounding where the Ark had come to rest.

⁷ H. N. Ross, 1998, 147, 148, is clearly confused or has deliberately ignored the clear chronological details in Genesis 7-8 when he refers to the Flood waters receding over an 11-month period. He has obviously arrived at this figure because he only regards the waters as rising during the 40 days of rainfall (p. 148), 11 months (330 days) being the balance of the duration of the Flood event after 40 days are subtracted from the total 371 days. However, as has already been emphasized, the scriptural record clearly states that the Flood waters prevailed [literally, were overwhelmingly mighty] upon the earth for 150 days (Genesis 7:24) before the waters “assuaged” (Genesis 8:1), the fountains of the deep and the windows of heaven stopped, and the rain restrained (Genesis 8:2), and the waters returned from off the earth continually (Genesis 8:3). In fact, Genesis 8:3 specifically states that after the end of the 150 days, the waters were abated. There is really no excuse for misreading the biblical text and as a result publicly misleading his readers, but then his erroneous calculations from his incorrect reading of the Scriptures are seemingly more supportive of his local flood concept than the true biblical figures for the duration of the rising and prevailing of the Flood waters.

But Noah waited another forty days before he opened the window of the Ark in order to send out the raven.

Custance misunderstands these details. He suggests that in the 74 days from the grounding of the Ark on the mountains of Ararat until the tops of the mountains were seen, the water level had only dropped between 25 and 30 feet (a little more than the presumed draught of 15 cubits for the Ark), so that dry land became visible only at the end of those 74 days.⁸ In support of this contention, he maintains that the raven was released during this 74-day period and wandered to and fro without finding a landing place because the dry land had not yet appeared. Custance then uses this misreading of the biblical text to arrive at a rate for the decreasing water level of 25 feet in 74 days, or about four inches per day, which of course is admirably consistent with his insistence that the Flood was only local.

However, Custance is wrong, because the chronology for this period of the abating waters, as outlined in Table 1, is very clear from the progression of verses in Genesis 8. In any case, it must be emphasized that at the end of the 74-day period, after the grounding of the Ark on the mountains of Ararat, we are specifically told that it was not merely the top of the high mountain on which the Ark rested that was seen, but “the tops of the mountains.” In other words, the Flood waters must have subsided hundreds of feet in order for various mountain peaks of different altitudes to be seen by then. Nor are the Scriptures teaching that the tops of the mountains were still submerged on the last day of the ninth month (day 73 after the Ark came to rest), and then suddenly emerged on the first day of the tenth month (day 74).

Furthermore, Noah did not subsequently send out the raven to determine whether any mountain peaks had emerged, as Custance assumes, but to gain information about the nature of those exposed areas. The raven’s failure to return to the Ark did not mean it hadn’t achieved the purpose Noah had intended. On the contrary, it was a good sign, because being a hardy bird it would have survived on carrion even though the exposed ground of the mountain tops was still inhospitable to other creatures. The total impossibility of Custance’s scenario is that if the raven was released forty days after the grounding of the Ark, within the 74-day period, then the dove would have been released three times in successive seven-day periods, and returned after having plucked the fresh olive leaf, more than two weeks before the tops of the mountains were exposed on day 74! We do well to follow the clear chronology outlined in the biblical narrative, allowing the Scriptures to speak for themselves, rather than force them to bolster a local flood interpretation.

The order in the stages for the abating of the Flood waters as given in Genesis 8, then, is as follows:

8 A. C. Custance, 1979, The extent of the Flood, in *The Flood: Local or Global?*, vol. IX: The Doorway Papers, Grand Rapids, MI: Zondervan, 22-24.

- After the waters had “prevailed upon the earth” for 150 days, the waters began to “assuage” [literally, calm].
- The Ark rested upon the mountains of Ararat the same day that the waters began to assuage, for the seventeenth day of the seventh month was exactly 150 days after the Flood began.
- The waters continued to abate and subside, so that by the first day of the tenth month (74 days later), the tops of various lower mountains could be seen. In this 74-day period after the Ark grounded on perhaps the highest peak of the mountains of Ararat, more and more of the lower peaks emerged, so that doubtless during much of the ninth month the tops of the various mountains were seen. Nevertheless, it is also true that on the first day of the tenth month “were the tops of the mountains seen,” Moses under the direction of the Holy Spirit choosing that particular date to mark the end of this stage in the abating of the waters. This whole process would suggest a drop in water levels of thousands of feet at a rate of perhaps 15 or 20 feet per day, at least during this initial 74-day stage of the assuaging period.
- The Flood level continued to fall for forty more days, so that Noah no longer feared the Flood would return and hence sent the raven out to investigate conditions outside the Ark on the exposed mountain tops.

As Whitcomb and Morris have already established,⁹ instead of constituting an objection to the global extent of the Flood, this rate of decline of the water level, in stark contrast to Custance’s spurious calculations, thus becomes a strong argument in its favor. If nothing else but the tops of the mountains could be seen after the waters had been subsiding for 74 days, then we are left with no other alternative than to conclude that the waters of the Flood must have covered the whole earth.

The details of the flights of the dove as recorded in Genesis 8:8-12 are also instructive. Noah first sent out the dove seven days after the raven had flown off and not returned, as suggested by the phrase “yet other seven days” (v. 10). Even though the mountainsides were now well and truly exposed, Noah again wanted to find out more about the ground conditions, so he sent out the dove, which as a cleaner bird would only be satisfied if it found a clean and dry resting place. The first time the dove was sent out, no such resting place was found and it returned. Seven days later when the dove was sent out a second time, it returned that evening with an olive leaf in its mouth. This was plucked from what was no doubt the budding of a piece of olive tree debris that had floated on the Flood waters, but now was partly buried in the newly exposed ground surface and had

9 Whitcomb and Morris, 1961, 7.

thus been regenerated during the seven days since the dove's previous flight. When the dove did not return after being sent out again seven days later, Noah knew that the Flood waters had abated sufficiently for the dove to find a clean and dry resting place with food for its needs.

These details also add to the complete picture as recorded in the Scriptures of definite stages in this abating of the waters period, and in the drying out of the ground. The speed at which the ground became hospitable for the dove so soon after the raven had gone also adds to the picture of rapidly falling water levels and rapidly regenerating vegetation. Such revegetation would have been accomplished asexually from the sprigs, or from floating seeds, that had survived from what had been a flood of global extent. Even the progression in Genesis 8:11, 13, 14 in the descriptions from "the waters were abated from off the earth" to "the waters were dried up from off the earth," "the face of the ground was dry" and "the earth dried," signifies the final drying out stages of the Flood waters were in a progression, which included another 86 days after the dove failed to return. This period of almost three months again emphasizes that this was no ordinary local flood which, if the details of local floods in recorded history are anything to go by, would have taken a lot less time for the ground to have dried out and the vegetation to be re-established.

Thus, the duration of the Flood in its assuaging, abating, and drying out, as well as in its prevailing, compels us to think of this event as a global and universal cataclysm, and not merely some localized catastrophe.