



## CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1. WHAT DO THE ROCKS SAY? .....	10
2. WHAT DOES THE BIBLE SAY? .....	26
3. THE TWO VIEWS CONTRASTED .....	34
4. DATING METHODS .....	42
5. RADIOISOTOPE DATING.....	48
6. HUMAN HISTORY AND THE YOUNG EARTH .....	72
7. WORLDWIDE PHYSICAL PROCESSES .....	78
8. GEOLOGIC EVIDENCE FOR A YOUNG EARTH.....	96
9. WHAT DO THE ROCKS MEAN? .....	120
INDEX.....	141

# Foreword

## FOREWORD TO THE FIRST EDITION

I believe this book is destined to meet a great need “for such a time as this” (Esther 4:14). The issue of origins is crucial to our understanding of the future, and there has been a significant revival of belief in creation as men and women have realized this fact in recent decades. The frightening glimpses of imminent world catastrophe and crises of all kinds should drive every person to a serious confrontation with the meaning of his or her life and destiny.

After all, there are only two basic world views: the God-centered world view or the man-centered world view, creation or evolution. If there is really a great personal Creator God behind the origin and meaning of all things, then we urgently need to know Him

and to order our lives according to His will, as revealed in His inspired Word. If human beings, on the other hand, are simply the end-products of a long process of evolution from the primordial nothingness (as taught today in most secular schools and information media), then “let us eat and drink; for tomorrow we die” (1 Cor. 15:32).

The decision obviously is one of urgent importance. Our personal lives (and possibly the present world itself) are ephemeral. The worldwide revival of true creationism in recent decades has occurred as more and more people have awakened to the urgency of this decision.

As one who has been directly involved with the creation movement for over 50 years, I can testify to this remarkable growth of intelligent belief in divine creation. There are now many thousands of scientists who have become creationists, and this includes scientists in every field and every nation. Polls show that half of the people in the United States now believe in special creation.

Even though most scientists and other intellectuals still continue to believe in evolution, the facts of science oppose evolutionism, and most people see this, once these facts are shown to them. There is no evidence whatsoever — past, present, or possible — that *vertical* evolution of one kind of organism into a more complex kind or organism has ever occurred, or ever can occur.

All the changes ever really observed in nature (e.g., different varieties of dogs and cats, different tribes of people) are *horizontal* changes, within fixed limits. Many kinds of creatures have deteriorated and become extinct in human history, but none has ever evolved into a higher kind. Similarly, in the fossil record of the past, there are many examples of deterioration and extinction, but no real transitional fossils from lower kinds to higher, more complex kinds. As far as *possible* evolutionary changes are concerned, the two basic laws of change in nature have been expressed scientifically as the law of conservation of *quantity* and the law of decay of *quality* — that is, the first and second laws of thermodynamics, which seem to indicate that “vertically upward” evolution is impossible.

While such scientific data do not seem to impress the doctrinaire evolutionists who control our scientific and educational establishments, they have convinced great numbers of people — scientists and laymen — that creation is a much better scientific “model” of origins and history than evolution.

As a result, in recent years, organizations studying and promoting scientific biblical creationism have been established in at least 25 countries around the world. In this country alone, there are probably 100 national, regional, or local creationist organizations. Perhaps the most influential of these (at least judging from the outcries of the evolutionists) is the Institute for Creation Research and its Graduate School of Science. Dr. John Morris, the author of this book, serves as ICR’s president, and has established a solid reputation as speaker and writer in the field of geology, a vitally important field of biblical and scientific creationism.

In addition to the scientific case for creation (which is essentially the same as the scientific case against evolution), there is an overwhelming biblical case for creation, as well as a moral and social case against evolution, as documented in the many publications of the Institute for Creation Research.

However, there still remains one serious problem, and that is the question of the age of the earth. Evolutionists, realizing that evolution requires immense periods of time to be even marginally feasible, have repeatedly fallen back on the supposed multi-billion-year history of the world as their main defense. Using their assumption of “continuity” or uniformitarianism (“the present is the key to the past”), it is relatively easy for them to find numerous natural processes whose present-day rates of action might suggest long ages of operation to produce the present structure of the world.

The fallacy in this approach, however, at least to a Bible-believing Christian, is that it rejects the divine revelation from the Creator of the world that He did it all in six days



several thousand years ago (Gen. 1:1–2:3; Exod. 20:8–11). Further, God defined the word “day” (Hebrew *yom*) the very first time the word was used, as the “light” period in the cyclical succession of light and darkness (Gen. 1:3–5) that has continued regularly ever since that first day.

Some, however, consider the Old Testament as conveying only theological concepts instead of historical facts. But the Lord Jesus Christ, who is actually the Creator of all things (John 1: 1–3; Col. 1:16) and who therefore knows how it was, completely rejected the long-age notion of the ancient evolutionary philosophers (Stoics and Epicureans). He reminded us that “from the beginning of the creation [not several billion years after the beginning] God made them [i.e., Adam and Eve, citing Genesis 1:27] male and female” (Mark 10:6; NKJV).

But what about the supposedly scientific indicators of great age for the earth and the universe? Must we choose between science and Scripture? No, of course not! The same God who created the world has given us His Word, and He does not contradict himself. If there seems to be a problem, either the world or His Word must have been misunderstood. At this point, most scientists and even many Christian leaders opt for the uniformitarian-age estimates of the evolutionists, and either reject the biblical testimony altogether or else “wrest . . . the scriptures” (2 Pet. 3:16) to try to make them accommodate the billions of years demanded by evolutionism.

Since John Morris is my son, I am both pleased and thankful that he has chosen a “more excellent way” in this book, knowing that God has magnified above all His Word and His Name (Ps. 138:2). John himself is both a scientist and a Christian leader. With a Ph.D. in geological engineering and many years of personal Bible study, he is eminently qualified to write this book. He believes, as I do, that God is able to speak plainly, especially on such vital issues as origins, meanings, and destinies. Therefore, the infallible biblical record of the recent, literal creation of all things and then the subsequent cataclysmic destruction of the world in the great Flood must be taken as established fact, with all the real data of science (as distinct from the uniformitarian interpretations of these data by fallible scientists) reinterpreted within a creationist context.



*The home of ICR's scientific laboratories in the San Diego, California area.*

That this is the God-honoring (rather than man-honoring) approach is confirmed in the climactic words of the apostle Peter shortly before he died. “In the last days,” he wrote, “scoffers” will be saying that “all things continue as they were from the beginning of creation” (2 Pet. 3:3–4; NKJV). This is an explicit prophecy of the latter-day prominence of the doctrine of continuity, or uniformity, which undergirds evolutionism. But then Peter says that they “willingly forget” two great facts of history. First, there is the special creation of all things “by the word of God,” not by continuing natural processes. Second, “The world that then was, being overflowed with water, perished” (2 Pet. 3:5–6; ASV).

Thus, the key to resolving the modern conflict between the Bible and evolutionary uniformitarianism, prophetically revealed two thousand years ago by the Holy Spirit through the apostle Peter, is to recognize and apply to the study of earth's processes and systems the two great facts of God's primeval, complete creation and the subsequent global deluge.

When this is done, as Dr. Morris has shown in this book with scientific insight, biblical conviction, and clarity of explanation, these processes and systems provide compellingly strong support for the biblical revelation of the recent creation and worldwide flood. There are no proven scientific evidences that the earth is old, but there are scores of circumstantial evidences that the earth is young. The only way we can know for certain the age of the earth is for God (who was there) to tell us. And this He has done! We should believe what He says.

— Henry M. Morris

President Emeritus, Institute for Creation Research  
Passed into glory as this second edition was being completed

*The Institute for Creation Research stresses the creation foundation for the Christian world view. Headquarters are in Dallas, Texas.*



# Introduction

This is, without a doubt, a fascinating time to be a Bible-believing Christian. On the one hand, the forces of evil are running rampant, with the earth seemingly on a collision course with its ultimate destiny. But on the other hand, there has never been a time when more support for the biblical world view was available. You might not have heard it in the media, but discovery after discovery confirms the truth of God's Word and the benefits of living according to God's guidelines.

Today we can watch as the concept of evolution self-destructs. It has never been well supported by the evidence, and now many scientists are coming forward to point out its weaknesses. Many have recognized the total inability of chance and random processes to

produce the incredible complexity we see around us, especially in living systems. Students of earth history have abandoned the creed of former decades, that "the present is the key to the past," and are proposing instead secular theories of past events that sound almost biblical in their proportions. The problem for Christians is gaining access to this revealing information, for many educators, politicians, and media outlets have joined forces to continue promoting the evolutionary, humanistic, naturalistic world view.

The American educational system has particularly done a great disservice to many Americans. Not only is its social agenda a disaster, but its academic training has also failed. The achievements of American students are lagging behind those of other developed countries. Many important facts and ideas are censored out of the classroom, and students are seldom taught how to *think* about the material they are allowed to see. Instead, they are taught certain facts and theories (expected to remember them and repeat them on a test), but skills in gathering and interpreting data are neglected.



Day 1

This is especially true when dealing with ideas about the past. The idea of evolution has come to be so firmly entrenched in our educational system that most people assume it is true. Scientific facts are placed within this interpretive scheme. End of discussion! Remember and repeat. Never mind the fact that no one has ever seen evolution take place, neither have the fossils documented evolutionary trends in the past, scientific law refutes the whole idea of evolution, and evolution is contrary to logic. Many people intuitively suspect evolution is not true, but still "believe" it anyway, because it is all they've been taught. "All educated people believe in evolution," they're told. "Only ignorant, bigoted Christian fundamentalists still deny it."

If people were taught to think, taught to recognize the difference between scientific facts, which can be observed in the present, and taught ideas about the past which can be used to interpret the facts, then the issue would clear up, for the intellectually honest, anyway. SAT scores would climb once again as *science* classes spent more time on *science* and less on ideas about evolutionary history.

Even many Christians are ensnared in the trap of not thinking critically. In the Bible they read that God created all things in six days. They have come to know the Lord and love and trust His Word, but they have heard that all educated people know that evolution has been proven. And so, they find themselves in a dilemma: creation or evolution, the Bible or science? Since science is true, and since it disagrees with the Bible, then Scripture must be untrue, they think.

Several options present themselves. A frequent response is to believe in creation at the appropriate times, but to believe evolution at other times, and try not to think about the inconsistency.

Or maybe the two are somehow compatible. Maybe God used evolution to create. Maybe the days of Genesis were long periods of time. Maybe evolution occurred in a "gap," then that original world was destroyed, and God re-created in six days. Maybe, maybe . . . "Well I'm just not going to think about it. I'll stay in the New Testament."

But those doubts! Where do the dinosaurs fit in with Scripture? Where did Cain get his wife? Where did the races



Day 2





*Day 3*

Young people from Christian homes and good churches go off to college and come back doubting and defeated or worse. Pastors don't teach the whole Scripture. Denominations go liberal. Seminaries teach a smorgasbord of ideas — choose whichever compromise you like; we can't know the truth.

The Institute for Creation Research (ICR) exists to address these issues. Its purpose is to study the evidence and give better interpretations, consistent with Scripture, and to discover new scientific truth where it can. But perhaps most of all, ICR's desire is to teach people how to think about the past, and how to interpret scientific and historical data from a scriptural perspective and to get it right! We have seen how evolution has been used as an excuse to doubt the gospel, and this roadblock needs to be removed.

In recent years, we have noticed an incredible resurgence of interest in creation thinking. Individual Christians and families have become desperate for good teaching on the subject of origins and science. Evolutionism and humanism have become so pervasive and so distasteful that more and more Christians no longer feel comfortable with the compromised message they've been taught.

ICR's most popular seminar series is called "Back-to-Genesis," and that is the theme of much that we do here at ICR. We're all scientists, but we're also Christians. We love science, but we also love the Lord, our Savior Jesus Christ, and His Word. We encourage Christians to go "back to Genesis," to see the *true* history recorded there and then interpret the scientific data relating to the unobserved past in submission to Scripture.

We do not spend the majority of the time in our seminars presenting new and different data. Instead, we take the same data used by our evolutionary colleagues (i.e., dinosaur fossils,

come from? What about the Ice Age? How did all those animals fit in Noah's ark? Where did all the water come from to cover the mountains? And where did it go? Reasoning from an evolutionary mindset, there are no good answers to these questions. And so, many think, maybe Scripture has errors. Maybe it can't be trusted. Maybe even the New Testament can't be trusted.

The result: a weak church, with weak, doubting Christians.



*Day 4*

racial differences, geologic deposits, etc.) and show how the data can be better interpreted from a biblical perspective. We have found that the Ph.D. scientist needs exactly the same teaching as the high school youngster. All of us need encouragement to think correctly — to think in terms of biblical fundamentals!

The scientist already knows the data and will immediately see how it should be reinterpreted. The layperson will recount evolution lectures and TV specials and recognize the error. Committed Christians rejoice to get their questions answered and doubts removed, to get the monkey of evolution off their backs. God's Word is true! It can be trusted, even in these difficult areas of science and history.

This book represents an outgrowth of my Back to Genesis lecture, "The Age of the Earth." At the end of each lecture, folks always rush up and ask where my material is in print. Numerous ICR books deal with this vital question (among others), but there seemed to be a need for a book that focused on both the data supporting a young earth and the way data are interpreted.

Presenting the age of the earth lecture always frustrates me. As a geology professor, I want to say so much, use so many examples. But in a 45-minute lecture, I just can't do it. Here in this book, much more information and much more support has been included, although much more could still be added.

This book does not pretend to be a complete technical treatment on the age of the earth. It hopefully provides a good lay understanding of the general subject, in such a way as to be of use to both lay and technical readers. It does, however, cover numerous important subjects, even technical subjects treated in a non-technical manner. My desire is that all readers will not only learn new information, presented in a non-threatening format, but a new and helpful way to think about the information as well.

This is not to say that the material is presented in a less-than-correct manner. We serve the God of truth, and *must* be both truthful and careful in all our study.

You will note that some of the references I've cited will be other creationist books where more complete



*Day 5*



*Day 6*



discussions of pertinent points are made, and where original sources are given. I would very much like to see each reader introduced to the wealth of good creationist books and articles, including my own. On other occasions, I have included references to particular technical sources, to aid in deeper understanding. On still other occasions, I will merely report on my own field work and observations, and thus *no* references may be given, if not published elsewhere.

Another question many people often ask after a lecture is where they can get copies of my illustrations. And so, I have endeavored to make the book "user-friendly," to provide the photos and sketches in a format that can be directly used in teaching. Additionally, I would encourage each teacher and creation speaker to acquire his own photos and examples from personal observation and investigation whenever possible, supplementing the material herein. The evidence for creation, the Flood, and the young earth, once rightly interpreted, is everywhere. Hopefully, this book will inspire many to take new notice of the evidence all around us. And hopefully this book will inspire many students to take up geology as a vocation and also inspire Christian geologists to join the work and solve some of the remaining problems for the young-earth concept. I do not claim, by any stretch of the imagination, that we have all the answers. What I do claim is to have access to the Book giving the framework for solving the problems. Let us proclaim what we do know, propose a model based on the biblical framework, continue to solve the remaining problems, and correct any flaws in our understanding as we go.

Before we start into the discussion, it probably would be helpful to give some definitions, so questions in the reader's mind can be avoided. You will notice that even these definitions and graphics are user-friendly, designed less for completeness than for ease of teaching.

**Biblical Creationism:** Supernatural creation of all things in six literal days by the God of the Bible.

**Scientific Creationism:** Each basic category of life

appeared abruptly, without

descending from an ancestor of a different sort. Much variation within a category is expected, but each possesses genetic limits to its variability, and thus exhibits stasis.

**Stasis:** The tendency of types of organisms to remain unchanged

over time; static or stationary with respect to evolutionary progress.

#### **Catastrophism:**

There have been episodes in the past that occurred at rates, scales, and intensities far greater than those possible today, or which were of an entirely different nature than those of today. This certainly includes special creation and the great flood of Noah's day, which would have restructured the entire planet and been the source of the rock and fossil records.

**Evolution:** The idea that all of life has come from a common ancestor through a process of modification over time. Thus, man and the apes are thought to have descended from an ape-like common ancestor. All vertebrates came from fish, which in turn came from an invertebrate. All life descended from a single-celled organism that arose spontaneously from non-living chemicals. Changes occurred through natural processes, including mutation, natural selection, and genetic recombination.

**Micro-evolution:** Small adaptations within a population of organisms which allow a certain trait to be expressed to a greater or lesser degree than before; variation within a given category. This is regularly observed to occur within living populations.

**Macro-evolution:** Large hypothetical changes which are thought to occur in an individual or in a population of organisms that produce an entirely new category or novel trait. These changes have never been observed to occur within living populations.

**Mutations:** Changes in the genetic material of an organism, potentially expressed in offspring. Many times a single mutation affects more than one trait. While some are neutral, many are lethal. No beneficial mutations that add information to the genome have been observed.

**Natural Selection:** The process observed within populations of organisms that select those traits best suited for a given environment. This conservative process tends to maintain the status quo and never produces new genetic material.

**Punctuated Equilibrium:** Macro-evolution on a rapid pace in brief periods during otherwise long ages of no change. Invoked to explain and allow for evolution in the absence of fossil transitional forms.

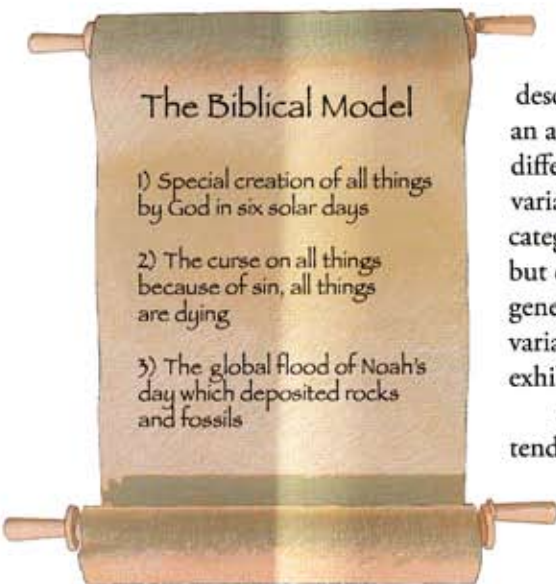
**Uniformitarianism:** "The present is the key to the past." Episodes of dramatically different rates or character

#### The Creation Model

- 1) Supernatural origins of all things with design, purpose, and interdependence of parts
- 2) Net basic decrease in complexity over time and limited horizontal change
- 3) Earth history dominated by catastrophic events

#### The Biblical Model

- 1) Special creation of all things by God in six solar days
- 2) The curse on all things because of sin, all things are dying
- 3) The global flood of Noah's day which deposited rocks and fossils





than processes possible today have never occurred. Present processes are extrapolated into the past under the assumption that things have remained "uniform."

**Geologic Column:** The column of fossils, with ancient ones on the bottom and more recent ones on the top, within the observed local sequences of the rock layers which have been systematized by correlation on a global scale. Does not exist in complete form in any one location, but as a trend on a global scale. Index fossils are thought to be unique to individual eras, periods, and systems. The time interpretation superimposed on the rock layer sequences is called the geological time scale and is linked to evolutionary dogma.

**Index Fossils:** While almost every stratum of rock contains many of the same basic fossil types (i.e., clams, coral, etc.), certain individual organisms or variations are thought to have existed in only a brief period of supposed geologic time, and thus can be used to determine the layer's age.

**Neo-catastrophism:** Natural catastrophes occurred in the past, which, while perhaps of great intensity and scale, were no different in character from processes possible today. These catastrophes were episodic, separated by long periods of uniformity. Popular theory among geologic thinkers today.

**Theistic Evolution:** Essentially the same as atheistic evolution in its relation to scientific data. God may have either started the evolution process, and then left it to natural processes, or may have guided the evolution process.

**Progressive Creation:** Sometimes called the day-age theory. The days of Genesis were long periods of time, roughly equivalent to the supposed geologic ages. Each basic category of life was created by supernatural intervention at various times throughout the ages.

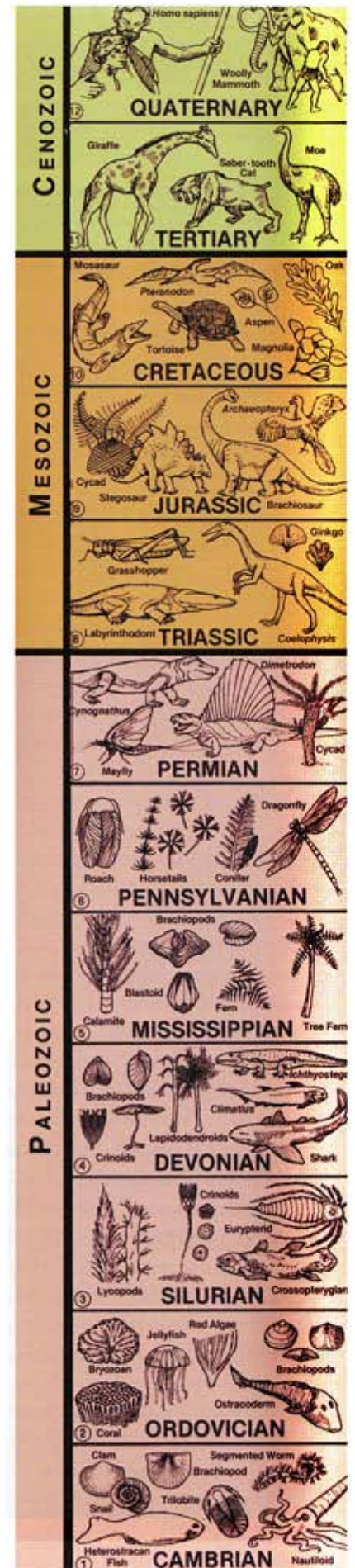
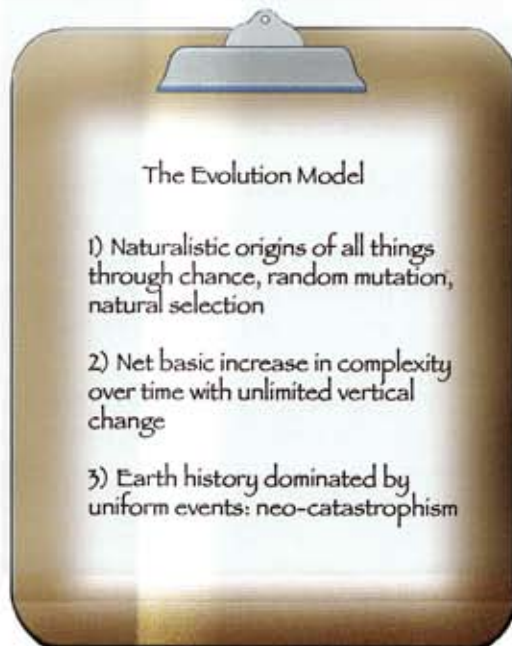
**Framework Hypothesis:** The idea that the Bible, when it speaks of things historic or scientific, is to be understood in a theological sense only, assuming that God was involved but

not as actually recorded. Genesis is not to be taken as factual history. This view is very popular in many modern evangelical seminaries, and allows theologians to fully accept evolution and/or long ages.

**Local Flood Theory:** The teaching that the flood of Noah's day covered only the Mesopotamian Valley — a major flood, but not global. This view (or its counterpart, the tranquil flood theory, which says that the Flood was global but had no discernible effect, i.e., no erosion, no rocks, no fossils) is a necessary part of any compromise with evolution or old-earth ideas, since the world's rock and fossil record is usually misinterpreted as evidence for evolution and an old earth.

**Evolutionism:** The application of evolutionary ideas in the public arena. Includes concepts such as social Darwinism, man is an animal, animal rights equivalent to human rights, low view of human life, etc.

**New Age Thinking:** The modern equivalent of ancient pantheism, melding evolution science with Eastern mysticism, espousing a one-world government, a combination of all religions, and evolutionism in society.





# Chapter One

## WHAT DO THE ROCKS SAY?

How many times have you opened a newspaper and read an article describing the discovery of a new fossil, archaeological find, or underground fault? After describing the nature of the discovery, the article explains how scientists are so thrilled with its confirmation of evolutionary theory. An age is reported, perhaps millions or even billions of years. No questions are raised concerning the accuracy of the date, and readers are led to feel they have no reason to question it either.

Did you ever wonder how scientists got that date? How do they know with certainty something that happened so long ago? It is almost as

if rocks and fossils talk, or come with labels on them explaining how old they are and how they were fossilized.

As an earth scientist, one who studies rocks and fossils, I will let you in on a little secret. My geologic colleagues may not like me to admit this, but rocks don't talk! Nor do they come with explanatory labels.

I have lots of rocks in my own personal collection, and there are many more in the ICR museum. These rocks are well cared for and much appreciated. I never did have a "pet rock," but I do have some favorites. I have spent many hours collecting, cataloging, and cleaning them. Some I have even polished and displayed.

But what would happen if I asked my favorite rock, "Rock, how old are you?" "Fossil, how did you get that way?" You know what would happen? Nothing! Rocks do not talk! They do not talk to me, and I strongly suspect they do not talk to my evolutionary colleagues either! So where then do the dates and histories come from?

The answer may surprise you with its simplicity, but the concept forms the key thrust of this book, which I have designed to explain how rocks and fossils are studied and how conclusions are drawn as to their histories. But more than that, I have tried to explain not only how this endeavor usually proceeds, but also how it *should* proceed.



*Inclined rock strata*

Before I continue, let me clearly state that evolutionists are, in most cases, good scientists, and men and women of integrity. Their theories are often precise and elegant, and we can learn much from their endeavors. It is not my intention to ridicule or confuse. It is my desire to expose the mind trap they have built for themselves and show a better way. Let me do this through a hypothetical dating effort, purely fictional but fairly typical in concept.

## HOW IT IS USUALLY DONE

Suppose you find a limestone rock containing a beautifully preserved fossil. You want to know the age of the rock, so you take it to the geology department at the nearby university and ask the professor. Fortunately, the professor takes an interest in your specimen and promises to spare no effort in its dating.

Much to your surprise, the professor does not perform carbon-14 dating on the fossil. He explains that carbon dating can only be used on organic materials, once-living things that consist mostly of carbon, not on rocks or even on the fossils, since they, too, are rock. Furthermore, in theory, carbon dating is only useful for the last few thousand years, and he suspects your fossil is millions of years old. Nor does



this expert measure the concentrations of radioactive isotopes to calculate the age of the rock. "Sedimentary rock, the kind which contains fossils," he explains, "ordinarily cannot be accurately dated by radioisotope methods. Such methods are only applicable to igneous rocks, like lava flows and granite." Instead, he studies only the *fossil's* shape and characteristics, not the rock. "By dating the fossil, the rock which contains it can be dated," he declares.

For purposes of this discussion, let us say your fossil is a clam. Many species of clams live today, of course, and this one looks only a little different from those you have seen. The professor informs you that many different clams have lived in the past. These were the ancestors of modern clams, but most have now become extinct.

Next, the professor removes a large book from his shelf entitled *Invertebrate Paleontology* and opens to the chapter on clams. Sketches of many clams are shown. At first glance many seem similar, but when you look closely, they are all slightly different. Your clam is compared to each one, until finally a clam nearly identical to yours appears. The caption under the sketch identifies your clam as an *index fossil*, and explains that this type of clam evolved some 320 million years ago. With a look of satisfaction and an air of certainty, the professor explains, "Your rock is approximately 320 million years old!"

Notice that the rock itself was not examined. The fossils in it dated it, and the fossil type was dated by the assumption of evolutionary progression over time. The limestone itself might be essentially identical to limestones of any age, so the rock cannot be used to date the rock. The fossils date the rock, and evolution dates the fossils. Evolutionists determined the order of evolution and estimated the ages involved even before the discovery of radioisotope decay and long before the formulation of radioisotope dating methods, but these were used to calibrate the fossil succession. The many problems with these methods are discussed in chapter 5, but today they give fossil dating an air of credibility.

You get to thinking. You know that limestones frequently contain fossils, but some seem to be a fine-grained matrix with no visible fossils. In many other limestones, the fossils that appear seem to be ground to pieces, and other sedimentary rocks, like sandstone and shale, might contain no visible fossils at all. "What do you do then?" you ask. "How can you date those rocks?"

The professor responds with a brief lecture on stratigraphy, information on how geologic layers are found one on top of the other, with the "older" ones (i.e., containing the oldest fossils) beneath the "younger" ones. This makes sense, for obviously the bottom layer had to be deposited before the upper layers. "But how are the *dates* obtained?" you ask. "By the fossils they contain!" he says.

It turns out that many sedimentary rocks cannot be dated all by themselves. If they have no fossils which can be dated within the evolutionary framework, then "We must look for other fossil-bearing layers, above and below, which can help us find the range of possible ages within which the true age must lie," the professor says. Such layers may not even be in the same location, but by tracing the layer laterally, perhaps for great distances, some evidence can be found.

"Fortunately, your rock had a good fossil in it, an *index* fossil, defined as an organism which lived at only one time in evolutionary history. It is not that it looks substantially more or less advanced than other clams, but it has a distinctive feature somewhat different from other clams. When we see *that* kind of clam, we know that the rock in which it is found is about 320 million years old, since *that* kind of clam lived 320 million years ago," he says. "Most fossils are *not* index fossils. Many organisms, including many kinds of clams, snails, insects, even single-celled organisms, did not change at all over hundreds of millions of years, and are found in many different layers. Since they did not live at any one particular time, we can't use *them* to date the rocks. Only *index* fossils are useful, since they are only found in one zone of rock, indicating they lived during a relatively brief period of geologic history. We know that because we only find them in one time period. Whenever we find them, we date the rock as of that age."

Let us pause in our story to identify this thinking process as circular reasoning. It obviously should have no place in science. In circular reasoning, instead of proceeding from observation to conclusion, the conclusion interprets the observation, which "proves" the conclusion. The fossils should contain the main evidence for evolution. But instead, we see that the age of rocks is determined by the stage of evolution of the index fossils found therein, which are themselves dated and organized by the age of the rocks. Thus, the rocks date the fossils, and the fossils date the rocks. The unquestioned assumption of evolution provides the context for the entire process.

Back to our story. On another occasion, you find an interesting piece of hardened lava, the kind extruded during a volcanic eruption as red hot, liquid lava. Obviously, it contains no fossils, since almost any remains would have been incinerated or severely altered. You want to know the age of this rock, too. But your professor friend in the geology department directs you to the geophysics department. "They can date this rock," you are told.

Your rock fascinates the geophysics professor. He explains that this is the kind of rock that can be dated by using *radioisotope-dating techniques*, based on precise measurements of the ratios of radioactive isotopes in





IS THE EARTH BILLIONS  
OF YEARS OLD, OR JUST  
THOUSANDS?  
DOES IT MATTER?



**D**id God create our world in six literal days, or did it evolve on its own over countless eons of time? The age of the earth — a key question in the creation/evolution debate — has been portrayed as an issue of science versus religion, but is it really that simple?

The answers to these questions are vital to understanding not just earth science, but also the biblical record. Dr. John Morris' *The Young Earth* scientifically examines the evidence to see what the earth actually reveals about itself. This classic and definitive work, newly revised and expanded, demonstrates that the Bible can be trusted in questions of science *and* history.

*The Young Earth* offers both compelling scientific analysis and effective biblical exposition. A powerful resource, **it also includes a CD** with PowerPoint presentations that illustrate such key concepts as salt levels in the oceans, the age of the atmosphere, the accumulation of ocean sediments, and much more.

- Great for presentations and personal study
- Organized for teaching to groups of all sizes
- Illustrated slides illuminate important points

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