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FOREWORD

The French Revolution of the late 18th century marked another, more subtle revolution — the enlightenment rejection of Christianity in favor of a new world view of secular naturalism. A growing band of intellectuals sought to “free” themselves from the “shackles of religion.” One of their most successful victories was the hijacking of the new science of geology in the years following the Napoleonic wars. Guided by the late 18th century works of the Scotsman James Hutton, 19th century geologists imposed a new history of the earth. This history rejected Genesis in favor of long ages of purely physical processes, and was called “uniformitarianism.”

Surprisingly, that 200-year-old dogma still persists in modern geology, probably because its version of history supplies a ready excuse to dismiss the Bible and the authority of its God. But after too many years of weak-kneed compromise, Christians in recent decades have begun to respond to the heresies of evolution and uniformitarianism. A small but growing minority has begun to question the geological monolith of uniformitarianism, to the extent that even secular geologists are frantically trying to have their cake and eat it too by insisting that catastrophism is really part and parcel of uniformitarianism!

Why are geologists and “intellectuals” so reticent to even give the Christian explanation a fair hearing? In large part, it is because the Christian challenge is not on the level of scientific facts, or even pet theories, but on the more foundational level of world views. For if the history of Genesis is right, and there was a creation, a Fall, and a Flood, then the whole world view of naturalism must be thoroughly and

irretrievably wrong. That is why scientists are fleeing the arena of ideas and resorting to the naked power of judicial force to protect their theories.

But all too many Christians have been slow to grasp the nature of this conflict, and still think and speak in the outmoded “religion vs. science” paradigm, forgetting that without Christianity there would be no science to begin with! Some have awakened to the world view conflict and have begun to criticize Darwinian evolution on those grounds. Science is no longer a successful “cloak” for evolution, in part because Christians have seen the truth of what Jesus said long ago — that a tree is known by its fruit. The fruit of Darwinism has brought only cultural rot. Christians are finally seeing that both evidence and common sense point to a creator — or to “intelligent design” in the modern jargon.

However, the Christian counteroffensive has been much weaker against the older and more deeply entrenched bastion of naturalism in the earth sciences, partly because all too many Christian academics believe that lip service to uniformitarian geology is a magic passkey to “intellectual respectability.” But the same philosophical arguments that have proven so effective against evolution also apply to uniformitarianism, and the evidence in favor of a catastrophic global Flood is very compelling. As Christian geologists continue to shed more light on the subject, more people will see just how naked the emperor really is.

Christians fighting in this arena have been labeled “creationists,” “young-earth creationists,” “Flood geologists,” etc. The names matter little — it is the ideas that are powerful. And the idea that garners the most publicity, that invites the harshest attacks from the entrenched elites, and that will prove the most revolutionary to modern thought is that the earth is not 4.55 billion years old. Rather, it is quite young in comparison, with a past marked by tumult and turmoil, not the Victorian stasis imagined by

the gentlemen geologists of old England. John Whitcomb and Henry Morris grasped this essential idea in 1961 with the publication of *The Genesis Flood*, and their definition of the conflict has dominated the discussion ever since.

Now geology can be as simple as a hike down the Grand Canyon, or as complex as steering a drill bit into a narrow reservoir 35,000 feet below the surface. So, although many of the basic ideas are simple, the necessary overhaul of the discipline of geology will be quite complex. But all tasks must start somewhere, and the increasingly innovative work of geologists like Carl Froede Jr. is demonstrating that those adhering to the biblical historical framework can provide explanations for physical phenomena every bit as powerful as those presented by the billions-of-years advocates — as will be demonstrated in the following chapters. These ideas represent nothing less than an ongoing revolution in thought.

This book broadly examines a number of geological phenomena, long thought to be explicable only in terms of “deep time.” However, the author demonstrates that all of them are easily understood in the catastrophic context of the Genesis flood and its aftermath. Although the topics are not exhaustively discussed, the author provides a wealth of references that will enable a comprehensive study of each topic by any interested reader. Along the way, you will see that the Flood interpretation is not simply a viable explanation for these geological features — it is the best explanation. As the title suggests, this volume will be a valuable aid for anyone willing to forsake the ivory towers to get out into the field, examine the rocks, and analyze them within the superior biblical framework.

John K. Reed, Ph.D.

Defining the Rock Record within the Context of Biblical History

Earth's geologic history can be constructed from rocks, fossils, radioactive isotopes, ice layers, and other geological features. The manner in which that history is assembled is based on a belief system or world view. In the past, the history conveyed in Genesis was the Western world's foundation for human origins and earth history. Belief in the biblical account focused on the global Flood and individuals who supported this world view were identified as "catastrophists." However, the movement of the Christian Church away from a literal interpretation of the Genesis account, particularly under the influence of the Enlightenment, served to erode confidence in the scriptural record (Laudan 1987). Questions regarding origins could only be answered by a purely naturalistic interpretation — one in which God is omitted. Within this world view of naturalism,¹ the earth's geologic past is defined using natural processes operating in similar settings under processes and rates that we observe today. This concept, that "the present is the key to the past," is known as uniformitarianism. Its icon is the geologic time scale (Figure 1-1). This world view of earth history uses the purported evolution of life and the decay of radioactive isotopes to assign an age to rocks consistent with the geologic time scale.

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these questions is that we start from the history that Scripture conveys and work toward understanding its geologic expression in the rocks. Instead of using the conceptualized uniformitarian geological time scale, *we emphasize the biblical account and construct an outline of earth history drawn from the actual rock record*. This book seeks to lay a foundation for this method. Field examples will show how the scriptural account of earth history presents the most reasonable explanation for the rock record. Two similar Bible-based time scales will also present the framework from which we can define our geologic studies. But first, we must review the uniformitarian time scale based in naturalism to understand its developmental history.

THE DEVELOPMENT OF THE UNIFORMITARIAN GEOLOGIC TIME SCALE

The Enlightenment was a time when many leading thinkers began to reject the Bible. One of their primary targets was its historical reliability, and the new science of geology gave them the perfect weapon. Earth history fell to the philosophies of naturalism and uniformitarianism, which were widely accepted long before they were formalized in 1795 with the publication of James Hutton's *Theory of the Earth* (Adams 1938; Albritton 1986; Gohau 1990; Greene 1982). While catastrophists did represent some of the greatest minds of that period, they were a minority in the battle to define earth history. In fact, it was the catastrophists² who produced the first geological maps (i.e., Cuvier and Brongniart's

UNIFORMITARIAN GEOLOGICAL TIME SCALE			
Eon	Era	Period	Age (Ma)
Phanerozoic	Cenozoic	Neogene	23.03
		Paleogene	
	Mesozoic	Cretaceous	65.5
		Jurassic	145.5
		Triassic	199.6
	Paleozoic	Permian	251.0
		Carboniferous	299.0
		Devonian	359.2
		Silurian	416.0
		Ordovician	443.7
		Cambrian	488.3
Proterozoic			542.0
Archean			2500
			~4550

Figure 1-1. The uniformitarian geologic time scale presents 4.55 billion years of radiometric and evolutionary history. It is assembled from a global patchwork of "type sections" (i.e., rock layers deemed representative for that particular interval of uniformitarian time). The lower 84 percent of the time scale contains little evidence of life and is age-dated solely from radiometric methods. Only in the last 542 million years do the fossilized remains of former life forms become abundant in the rocks where time can be measured by evolution. Not to scale and modified from Gradstein and others, 2004.

final version of their map of the Paris region in 1811, followed by William Smith's map of England, Wales, and portions of Scotland in 1815). However, this work was quickly assimilated into the naturalist world view. In succeeding years, British geologists developed the framework for the modern uniformitarian time scale, which quickly became the standard for ordering and mapping new field data around the world (Rudwick 1985a, 1985b; Secord 1986).

The history and development of the geological sciences can be traced back to the 17th century, when scientists became interested in the lithologic (sediment composition and color) and paleontologic (fossilized organic life forms) content of the sedimentary rock layers. Their analysis of these geologic materials provided no obvious means of determining an appropriate age based solely on the contents or characteristics of the rocks and fossils. However, as field studies of the various sedimentary layers progressed, vertical relationships among the sedimentary layers were noted. Nicolas Steno, a Danish physician working in Tuscany, deduced that the relative age of stratified sediments could be determined using the "law of superposition."³ Later, certain types of fossilized plants and animals were found in what is interpreted to be a specific succession of changing environments and this led to another concept identified as the "law of faunal succession." This biostratigraphic division of the sediments (based on changes in fossilized plants and animals) was later used to support Darwin's concept of an evolutionary progression of life through time. In turn, evolution provided a "clock" by which geologists could date rock layers.

But even in the turbulent 1800s, not all Bible-believing geologists accepted uniformitarianism (see Mortenson 1997, 2003, 2004). Unfortunately, the geologic work of these Bible-believing Christians failed to develop a scriptural alternative to the geological time scale that could command the same popularity and provide a framework for field

research. The momentum of naturalism was too great, and its broad acceptance marginalized these men. As a result, uniformitarianism has dominated the geological sciences (Mortenson 2006). Today, the uniformitarian geologic time scale commands the geological sciences and is the only widely accepted view of earth history (Figure 1-1) (Cohee and others 1978; Berggren and others 1995; Gradstein and others 2004; Harland and others 1990; North American Commission on Stratigraphic Nomenclature 2005; Salvador 1994; Snelling, 1985).

If the time scale is the child of uniformitarianism and if uniformitarianism is a part of the world view of naturalism, then Christians cannot simply concede the geological sciences. Fortunately, recent decades have seen a resurgence in biblical creationism and Flood geology following the publication of *The Genesis Flood* (Whitcomb and Morris 1961). A part of that effort has been a critique of the time scale, and several serious flaws have been identified and discussed (see Reed 2001; Reed and Froede 2003; Reed and Oard 2006).

MORE GAPS THAN RECORD

It must be understood that the uniformitarian geologic time scale is a conceptual framework. In very few places do uniformitarian geologists find a stratigraphic section containing most of the major eras of the time scale fitted together. Even then, much of the rock record is missing — periods of tens of millions of years might be represented by only a few thin layers. Often there are many time gaps present (Figure 1-2). A prominent uniformitarian geologist, the late Derek Ager, recognized and noted this perplexing situation over his many years of studying the rock record (1993a). Therefore, it is important to note that the rock layers at any one location on earth are very incomplete time records.

Incomplete history is a tremendous problem for followers of naturalism, because in rejecting

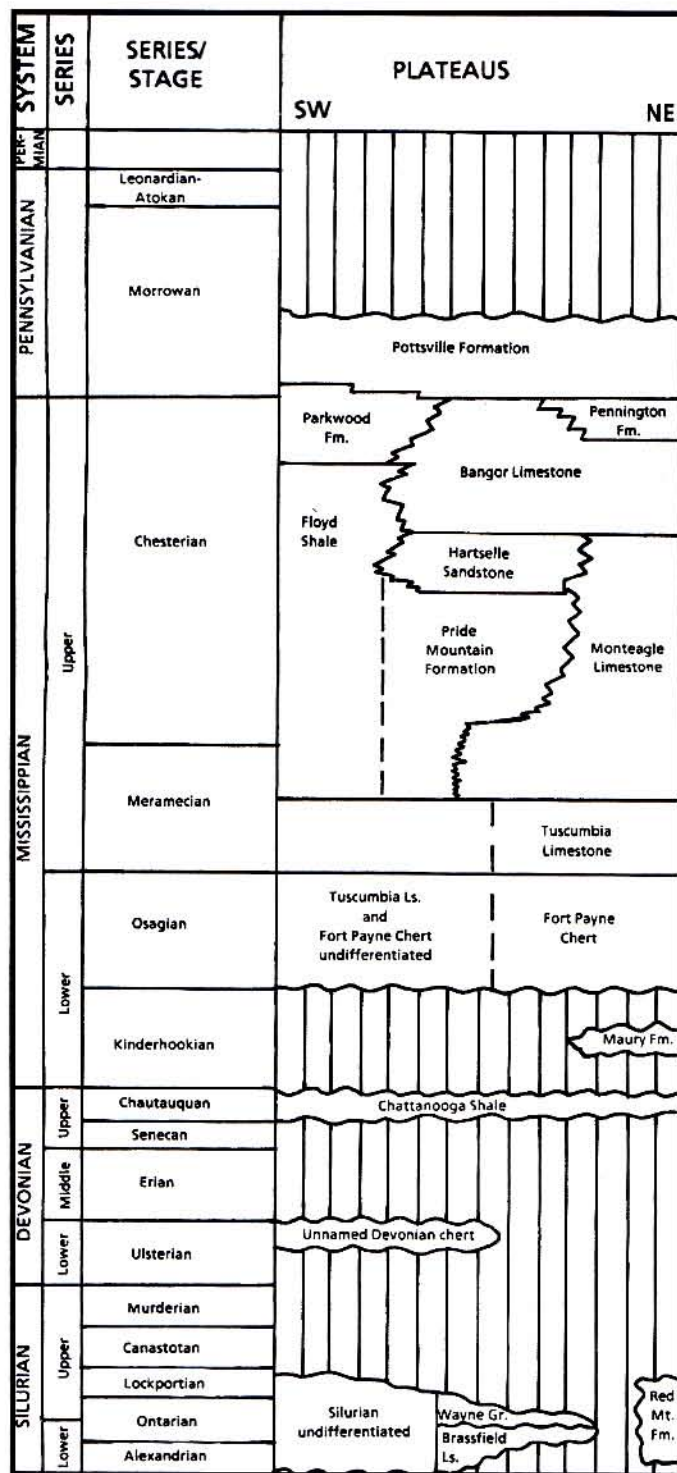
God and the Bible, they are forced to an empirical (i.e., scientifically testable) path to knowledge. No data means no knowledge. Thus, the absence of so much of their historical record means that their confidence in their knowledge of history must also be deficient. Even claiming that their knowledge is based in "science" cannot hide that logic.

Regardless of what can be learned from the rocks, nothing can be understood from the gaps. No matter how geologists might seek to fill those gaps by inference, speculation, and extrapolation, it can never be anything more. Thus, the time scale provides an attractive abstract of their historical narrative, but in many instances it lacks real substance.

NATURAL HISTORY AND SCIENCE

The incomplete nature of uniformitarian history points to an even more serious problem regarding the differences between natural history and science. History is the study of unique past events. Science is the study of present-day observable processes, relying on repeated observations under

Figure 1-2. There is a dramatic difference between the conceptual time scale and the physical rock record. In most cases, rocks do not represent the entire section of time in which they are defined. Geologists have recognized this discrepancy for many years and have resolved it through the construction of stratigraphic correlation charts. This particular chart is from the plateau region of Alabama (Raymond and others 1988). It reveals both the rocks that are present (assuming long ages for deposition) and the missing time/rock record, represented by vertical lines. This chart does not span the entire stratigraphic section for the Alabama plateau, but shows that much of the area's history consists of no rock record of time. The "youngest" rocks exposed in the area are from the Pottsville Formation, with a time gap of approximately 316 million years between its upper surface and the present. Instead of getting bogged down in the uniformitarian morass, we should focus our investigative efforts on understanding the actual rock record, and interpret it within the framework of the Bible.



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