

Jehovah’s Witness Literature—A Study In Inaccuracy and Dishonesty

OR

A Letter to the Governing Body

February 2022

I am speaking to move you to shame.—1 Cor. 6:5

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Introduction

Jehovah's Witnesses think of themselves as the most honest people in the world based on the Bible's standard for Christians. In my experience this has proved to be true for most individual JWs. On the other hand, people who are familiar with Jehovah's Witnesses (JWs) as an organization know that some of their teachings are demonstrably untrue. A careful study of JW literature indicates that the writers are aware that some of what they write is false—or at least unjustifiable on reasoned grounds. Many people are of the opinion that scholastic dishonesty is the overriding characteristic of JW literature, as the following opinion by author Alan Rogerson shows:¹

A long acquaintance with the literature of the Witnesses leads one to the conclusion that they live in the intellectual 'twilight zone.' That is, most of their members, even their leaders, are not well educated and not very intelligent. Whenever their literature strays onto the fields of philosophy, academic theology, science or any severe mental discipline their ideas at best mirror popular misconceptions, at worst they are completely nonsensical.

This article will point out some areas where sound reasoning and well-established science, history, and other disciplines show that JW teaching is wrong or based on questionable claims or assumptions. I am little concerned with doctrinal matters, because such are largely based on subjective opinion and therefore undecidable.

A talk given by Governing Body member Mark Sanderson in the December 2019 JW Broadcasting video² goes a long way toward explaining why many people have such a low opinion of the honesty and accuracy of JW literature. Sanderson addressed the graduating class of the 147th Gilead class and made some remarks about secular/college education. At time 1:20 he asked them how far they would go toward getting a college education. He stated that, in the sense of getting a college degree:

Going far in secular education is solely a means of self-fulfillment, and not necessarily to help others. Some study what's called 'pure science' meant just to advance mankind's understanding of science but with no practical benefit. Some study dead languages. Some study bacteria. Or insects, which is wonderful if you like insects [audience laughs]. It may increase knowledge, but it doesn't necessarily help anyone. Well divine education is so different. You see, it motivates us to ask the question, How far can I go, not to further myself, but to help others. Now, Jehovah God and Christ Jesus really set the example for us here...

Of course, anyone who contemplates the benefits that science, pure or applied, has brought mankind understands that Sanderson's remarks are a study in pious, cartoonish, and ignorant self-righteousness and border on slander against the thousands of dedicated scientists who often sacrifice much in pursuit of good science—science that has saved millions of lives. The next time Sanderson comes down with some infectious disease, let him contemplate the dedicated scientists who have come up with vaccines by studying microbes. Or perhaps he would prefer to park himself in the offices of the Writing Department and hope for a divinely directed cure to be given to those writers.

Sanderson ought to realize that the very broadcast media by which he is proclaiming his nonsense is a product of pure science followed by applied science. Nineteenth-century scientists, largely out of curiosity, discovered the phenomenon of electron emission from hot metal, which was developed into the vacuum tubes that made radio broadcasting possible. More pure science was done in the 1920s that allowed much more efficient radios and other electronics to be built, and in the 1940s that resulted in

¹ Alan Rogerson, *Millions Now Living Will Never Die: A Study of Jehovah's Witnesses*, 1969, p. 116.

² https://www.jw.org/en/library/videos/#en/mediaitems/StudioMonthlyPrograms/pub-jwb_201912_1_VIDEO

the transistor, which has completely transformed technology. Soon transistors were combined into integrated circuits, which allowed compact electronic computers to be invented and again drastically change the technological scene. Scientists doing pure and applied science in the 1970s invented the Internet for military and academic use. Scientists doing pure science at the giant CERN lab in Geneva invented the World Wide Web in the late 1980s. Various programmers implemented WWW methods in the 1990s. Cell phone technology, at first just a curiosity, began another huge change in the 1990s. Small computers became ubiquitous beginning in the 1980s, so that today it is inconceivable that business could function without them. Nor could the efficient printing operations that allow outfits like the Watch Tower Society to easily produce reams of output.

Clearly, Mark Sanderson has no idea what he is talking about and displays stunning hubris.

Sanderson's attitude explains why JW writers get so much so wrong, just as Alan Rogerson said. Having no education in science, these writers simply do not know what they are talking about. Most of them get a smattering of science education by reading, not scientific books and journals for the purpose of educating themselves about science, but mostly popular sources written by science journalists rather than scientists. And we all know how the popular media can distort what primary sources say. Sometimes JW writers even get their 'scientific' information from religious sources masquerading as scientific ones for political purposes, such as the notion of "intelligent design" promoted by the politically right-wing Discovery Institute, whose goal is to turn the United States into a conservative theocracy ruled by Christian Fundamentalists.

Because its leaders and writers are largely scientifically ignorant, and they are at least vaguely aware of it, the Watch Tower Society never substantively discusses many important issues, even though they are fundamental to describing or achieving an understanding of the world in which we live. Instead, issues are often oversimplified to the point that readers get no real understanding. I believe that this is the case for two main reasons: Watch Tower leaders and writers are so ignorant of science that they do not understand how ignorant they are,³ and Watch Tower leaders have a vested interest in keeping their followers ignorant of the details of sticky subjects like evolution. That is why, for example, the Society has never published a retraction of its old view that the creative days of Genesis were 7,000 years long, or of its now-abandoned view that young-earth creationist "flood geology" accounts for most of the earth's geological features.

The November 2017 JW Broadcasting video (No. 38) made a point of claiming that Watch Tower writers take very seriously their task of maintaining a high standard of accuracy⁴. But non-JWs who are familiar with Watch Tower literature know that it is often inaccurate, especially when a Watch Tower teaching is contradicted by reliable sources. It is inaccurate not only in its quoting practices but in its tendency to use specious arguments. For example, many Watch Tower writers' arguments are classic examples of confirmation bias.⁵ I will point out several especially egregious examples from literature ranging from the 1940s to the present (2022). Much JW literature older than the 1960s is so inaccurate that it is laughable.

At appropriate times I will quote one of the speakers in the JW Broadcasting video to show the contrast between his claim and what is actually found in Watch Tower literature.⁶ Note that I use

³ https://en.wikipedia.org/wiki/Dunning%E2%80%93Kruger_effect

⁴ https://tv.jw.org/#en/mediaitems/StudioMonthly2017/pub-jwb_201711_1_VIDEO

⁵ https://en.wikipedia.org/wiki/Confirmation_bias

⁶ I will sometimes refer to any of the corporations owned and operated by the Watch Tower Bible & Tract Society of Pennsylvania as the "WTS" or "JWs", etc., because in everyday parlance they are, for all practical purposes, the same organization.

various terms for the JW organization as I deem appropriate: the Watch Tower Society, the Watchtower, the Society, the JW organization, etc. These have all been used by JWs to refer to the organizations that give them their marching orders.

The very Bible that these men claim to revere condemns the scholastic dishonesty that they preside over. Job told his accusers:⁷

Are you defending God with lies? Do you make your dishonest arguments for his sake? Will you slant your testimony in his favor? Will you argue God's case for him? What will happen when he finds out what you are doing? Can you fool him as easily as you fool people? No, you will be in trouble with him if you secretly slant your testimony in his favor. Doesn't his majesty terrify you? Doesn't your fear of him overwhelm you? Your platitudes are as valuable as ashes. Your defense is as fragile as a clay pot.

⁷ Job 13:7-12, *New Living Translation*

How the Watch Tower Society's Scholastic Dishonesty Can Lead to Distrust of the Bible and the JW Organization

The scholastic dishonesty in Watch Tower literature is often subtle but evident to any honest person who looks carefully and with unbiased eyes. Having grown up as a JW, and having always had an academic bent, I eagerly read Watch Tower material when I was young and thought I understood it quite well. But as time passed and I matured, I sometimes came upon some point that just did not seem to stand up to well-established realities that I knew from other sources. Sometimes the reasoning in an article seemed strained or even downright ridiculous.

For example, shortly after I was baptized at age 15 in 1967, the Society decided that organ transplants are a form of cannibalism. Even at that tender age I understood that the reasoning was ridiculous. Today I know that it sprang from the fertile and bent mind of Fred Franz. I doubt that any Governing Body member or other Watch Tower official today would try to defend Franz's ideas on organ transplants, or most any of the other wild ideas he came up with such as on types/antitypes. After rejecting that bit of stupidity, I did not blindly trust what was written in Watch Tower publications.

Along came 1971 and the new teaching that the physical heart and the brain carried on "conversations", the heart being literally the seat of emotions and the brain being the seat of intellect. When I read that series of *Watchtower* articles I thought, "What the ...?" I remember one day in field service, when my pioneer partner tried to explain this nonsense to the householder. He looked at him like he had two heads. I tried to ease away and sink into the porch. At the summer district assembly in Yankee Stadium, the stage was set up with a giant green brain on one side and a giant red heart on the other. During the speaker's presentation, one or the other would light up as the 'intellect' argued with the 'emotions'. I almost felt like I was in a dream. All this nonsense reinforced my feeling that the Society was not to be trusted on certain subjects. Of course, this meant that JW leaders did not speak for the God of truth.

In 1967 the Society came up with the six-month Bible study program to go along with the release of the new *Truth* book. The idea was that JWs should study with householders for a maximum of six months unless they began making progress by coming to meetings and so forth. I complied, with the few Bible students I had, but was extremely uncomfortable, having a sneaking feeling that this practice was unchristian. About 1971 I visited my grandparents, and one day found on my grandfather's reading table—he was not a JW, but the family always pressured him—a pamphlet from Armstrong's Worldwide Church of God. After reading it, I understood that Armstrong's Church was largely similar to the Watch Tower organization, but that it was really just another fake Christian organization. One criticism stood out: The Watch Tower Society, with its six-month Bible study program, was not really interested in producing real, knowledgeable Christians, but merely "assembly line Christians" to boost membership rolls. This hurt my conscience terribly because it was exactly what I had already suspected as a teenager. And of course, the Society was working hard to increase numbers because Armageddon would probably come by 1975.

Because of these and other things, I nearly dropped out of the JWs, but my parents convinced me to give it another try, which I did. I deliberately suppressed various misgivings, since no one could give good answers. I immersed myself in JW activities for a few years and married a pioneer sister. But Armageddon failed to arrive in 1975 as the Society taught us it would, and within a couple of years I began to imagine what my circumstances might be like in 30 years, when Armageddon still had not

arrived and I had lived a life more difficult than it would have been had I not believed the Society's teachings. I began to realize that what the Watch Tower Society had told me back in 1969 was false.⁸

If you are a young person, you also need to face the fact that you will never grow old in this present system of things.

I am now an old man of 70, retired after a successful career designing microchips.

In 1978 my non-JW father-in-law convinced me to go to college, which turned out to be the best thing I ever did. I pretty much dropped out of JW life during college, having little time for anything besides work and study.

In early 1980 I took a class in anthropology which required a term paper. I combined my interest in Noah's Flood with this requirement by planning to write a paper showing that Noah's Flood was a real event. I would include material about Flood legends as well as physical effects. Watch Tower publications dealing with the Flood contained many references to secular publications, and I figured that the college library would have most of that material on hand. It did, but I was hardly prepared for what I found—that most of the references were from worthless popular accounts (although the impression was given that these were of real scientific value), or were quoted out of context or otherwise misrepresented. Some references were even handled in such a way that the reader was led to believe they said the opposite of what they actually did.

For example, in a number of publications the Society claimed that mammoths had often been found "quick-frozen" in the Arctic in virtually perfect condition. A picture of the famous 1899 discovery of the Siberian Berezovka mammoth (for more details see pages 23 and 135), the remains of which are now on display in the St. Petersburg (Leningrad) Zoological Museum, was sometimes set forth as proof of this claim. The picture is taken from the *Smithsonian Institution Annual Report for 1903* (p. 624), which contains an extensive report on the recovery of the mammoth's remains. This report shows that, far from being "quick-frozen", the mammoth was largely rotten by the time it froze solid, so that only the outermost parts, such as the shoulders and neck and head, were frozen in an unrotted condition. But even these were so foul that only the sled dogs could touch the meat. This report, then, completely contradicted what the Society had claimed for decades about such finds in the Arctic.

Because the majority of references were misrepresented in some way, I could not honestly use them in my paper. I gave up on the Flood theme and thought that writing a defense of creation against evolution would work well, so I looked up references on that topic, too, from Society publications. I used the books *Did Man Get Here By Evolution or by Creation, Is the Bible Really the Word of God?*, and various *Watchtower* and *Awake!* articles. But I found the same problem with these references—ones that were supposed to knock down evolution—as I had found with those used to support the Flood. Since the end of the term was rapidly approaching, I nearly panicked, but managed to find a book written by a lawyer,⁹ which used quotations from various scientists to poke at Darwinism, but without distorting them. This was barely adequate to let me write the paper and pass the course. This experience further eroded my opinion of Watch Tower scholarship and intellectual integrity.

For the reader to understand another significant problem with the integrity of Watch Tower writers, I must describe a bit of the Society's history of teachings about Noah's Flood.

⁸ *Awake!*, May 22, 1969, p. 15.

⁹ Norman MacBeth, *Darwin Retried*, 1971.

Since the earliest days of C. T. Russell, the Watch Tower Society taught various versions of the “annular theory” of the Flood originated by a crackpot named Isaac Newton Vail in 1874.¹⁰ According to this idea, until the Flood the earth was surrounded by a ring largely composed of water, much like that of Saturn. It was held up by “centrifugal force”. To create the Flood, a sort of canopy gradually descended from this ring and spread out from the equator to the poles. This was explicitly taught at least through 1943.¹¹ Some time after that the ring idea was gradually eliminated, leaving only a mushy idea of a watery “canopy”, so that by 1956 the “annular theory” was last mentioned¹² as an outmoded idea. Between 1943 and 1956, Watch Tower writers seem to have adopted bits and pieces of so-called catastrophism as taught by a number of cranks.¹³ In 1961, young-earth creationists Henry Morris and John Whitcomb published the book *The Genesis Flood*,¹⁴ which was based on the ideas of the Seventh-Day Adventist and young-earth creationist crackpot George McCready Price.¹⁵ In 1962 the Society explicitly began teaching the “vapor canopy” ideas of Price, Morris and Whitcomb,¹⁶ but gave them no credit. Since the 1990s most young-earth creationists have given up on the idea.¹⁷

A vapor canopy capable of supplying enough water for a global flood thousands of meters deep is physically impossible, using either YEC notions or Watch Tower notions. Most of these posit a layer of water vapor suspended above the ‘expanse’ of Genesis 1, which collapsed to the surface of the earth and caused Noah’s Flood. But this notion has fatal problems:

- Such a layer would be unstable due to mixing of the water vapor and the air below it. If it were somehow put in place, it would dissipate and mix with the air below in a few months at most. That would quickly result in an atmosphere supersaturated with water, which would quickly precipitate out.
- A layer containing enough vapor to flood the earth to a mere 10 meters would double atmospheric pressure, which is enough to kill or incapacitate most oxygen-breathing creatures by oxygen poisoning and nitrogen narcosis. God would have had to change all the animals after the Flood to be able to breathe the resulting lower atmospheric pressure. A layer with enough water to flood the earth to 4 kilometers depth would produce atmospheric pressure about equal to the pressure in the ocean at a depth of 4 kilometers, again physically impossible for air-breathing creatures to survive.

¹⁰ <http://www.creationscience.com/onlinebook/FAQ310.html>

¹¹ *The Truth Shall Make You Free*, 1943, pp. 57-62, 134-136.

¹² *Awake!*, July 8, 1956, p. 14.

¹³ George McCready Price, a self-taught Seventh-Day Adventist apologist who originated the term “Flood geology”. His writings were the seed of the modern young-earth creationism movement. Immanuel Velikovsky, who wrote a number of books claiming that physically impossible events, like the planets Mars and Venus zooming nearby the earth, produced various catastrophes such as the Old Testament plagues upon Egypt. He has come to be regarded as “the very model of a crank.”—Martin Gardner, *Science: Good, Bad and Bogus*, p. xiv. Henry Howorth, a lawyer, politician and arm-chair geologist writing on the Flood. Howorth wrote *The Mammoth and the Flood*, *The Glacial Nightmare and the Flood*, and *Ice or Water: Which?* Even a cursory reading by anyone competent in geology shows that Howorth was yet another in a long line of cranks.

¹⁴ https://en.wikipedia.org/wiki/The_Genesis_Flood

¹⁵ https://en.wikipedia.org/wiki/George_McCready_Price

¹⁶ *The Watchtower*, September 15, 1962, p. 575

¹⁷ The YECs gradually abandoned the “vapor canopy” idea beginning in the 1980s, with the publication of a PhD thesis that was later turned into the book *The Waters Above: Earth’s Pre-Flood Vapor Canopy* (Joseph C. Dillow, Moody Press, 1981). Dillow was a young-earth creationist who accepted the “flood geology” of Price, and Morris and Whitcomb. He wanted to show that a canopy of pure water vapor was possible. But he ended up proving that, if such a canopy could be miraculously put in place, it would be unstable and dissipate within a few months at most. Furthermore, because the idea of a “vapor canopy” is not found in the Bible, but is founded upon 150 years of speculation by creationists, Dillow stated: “We readily admit that Genesis does not teach the existence of a pre-Flood vapor canopy.” (*The Waters Above*, p. 222). By 2009, the physical impossibility of such a canopy forced the YECs to completely give up on it. See <https://answersingenesis.org/environmental-science/the-collapse-of-the-canopy-model/> ; <https://media.kgov.com/files/albright-flood-series-1-VCT-20160721.pdf>

- A vapor layer thick enough to produce any reasonable amount of flooding would result in an unlivable temperature increase at the surface due to the greenhouse effect—well above boiling and far more than the mild “hothouse” condition claimed in Watch Tower literature. The only way around this is to speculate that the sun was significantly dimmer before the Flood, so that after the Flood God must have increased the sun’s energy output. Such miracles are obviously ridiculous.
- The latent heat of condensation of a vapor canopy sufficient to produce significant flooding would boil the surface of the earth as it fell.
- A canopy thin enough not to produce the above effects would not have contained sufficient water to produce 40 days of torrential rain.

Someone might argue that these problems are nothing for an all-powerful God to solve, but there is no support for that either in the Bible or in any actual physical evidence. There never was a vapor canopy.

And if God had to perform various miracles to pull off a worldwide Flood, then why not just poof the wicked humans out of existence and leave the rest of earthly creation alone? It’s like using a hydrogen bomb to swat a fly. After all, doesn’t the Bible say that just one of God’s angels killed 185,000 Assyrian soldiers in one night? Or was the Flood just God grandstanding?

The Genesis Flood kicked off the modern young-earth creationist movement, with Henry Morris in the 1960s helping put together several creationist organizations and in 1972 founding the Institute for Creation Research. The Society often used ideas from Morris’ book to argue for the Flood and to argue against the reality of the Ice Ages, occasionally giving him credit but mostly not.¹⁸ The last time the Watch Tower Society argued against the reality of the Ice Ages appears to be in the August 15, 1979 *Watchtower* (p. 30).

In the 1960s and 1970s, geoscientists discovered a great deal about the Ice Ages, determining that over the past 2-3 million years an ice age maximum occurred about once every 40,000 or 100,000 years. This periodicity was due mainly to regular variations in the earth’s orbit and rotation.¹⁹ I was extremely interested in these ongoing discoveries, since they were directly related to my beliefs as a JW about Noah’s Flood. Of course, my college experience of trying to write an essay defending Noah’s Flood using Watch Tower publications, and discovering that they were pretty much unusable due to their misquoting and misrepresenting source references, eventually led to my rejecting the idea of a global Flood that happened some 4,400 years ago.²⁰

Apparently the Society, since the late 1980s, has decided not to argue for physical evidence for the Flood. The latest discussions are in the 1988 *Insight* book²¹ and the 1989 book *The Bible—God’s Word or Man’s?*²² These focus on the vapor canopy as the main source of Flood water, the claim that mountains were much lower and ocean basins much shallower before the Flood, a vague idea that animal extinctions had something to do with it and that a sudden climate change somehow quick-froze millions of animals in the Arctic,²³ and a vague argument that science has made mistakes so perhaps scientists are missing evidence for the Flood. Other evidences put forth are the testimony of various

¹⁸ No credit given: *Awake!*, June 22, 1963, p. 9

Credit given: *The Watchtower*, July 15, 1968, p. 420

¹⁹ https://en.wikipedia.org/wiki/Ice_age

https://en.wikipedia.org/wiki/Milankovitch_cycles

²⁰ <https://www.critiquesonthewatchtower.org/old-articles/2006/02/part-1-general-description-of-flood.html>

²¹ *Insight on the Scriptures*, Vol. 1, pp. 327-328, 609-612

²² *The Bible—God’s Word or Man’s?*, pp. 110-116

²³ This is pure nonsense; cf. <https://www.critiquesonthewatchtower.org/old-articles/2006/02/part-2-polar-regions.html>

Bible writers and Flood legends, but these are not physical evidences. Here are two excerpts from *Insight* that summarize such arguments:²⁴

Since, as the Genesis account says, “all the tall mountains” were covered with water, where is all that water now? Evidently it is right here on the earth. It is believed that there was a time when the oceans were smaller and the continents were larger than they are now, as is evidenced by river channels extending far out under the oceans. It should also be noted that scientists have stated that mountains in the past were much lower than at present, and some mountains have even been pushed up from under the seas. As to the present situation, it is said that “there is ten times as much water by volume in the ocean as there is land above sea level. Dump all this land evenly into the sea, and water would cover the entire earth, one and one-half miles deep.” (*National Geographic*, January 1945, p. 105) So, after the floodwaters fell, but before the raising of mountains and the lowering of seabeds and before the buildup of polar ice caps, there was more than enough water to cover “all the tall mountains,” as the inspired record says... With the sudden opening of the ‘springs of the watery deep’ and “the floodgates of the heavens,” untold billions of tons of water deluged the earth. (Ge 7:11) This may have caused tremendous changes in earth’s surface. The earth’s crust, which is relatively thin and varied in thickness, is stretched over a rather plastic mass thousands of kilometers in diameter. Hence, under the added weight of the water, there was likely a great shifting in the crust. In time new mountains evidently were thrust upward, old mountains rose to new heights, shallow sea basins were deepened, and new shorelines were established, with the result that now about 70 percent of the surface is covered with water. This shifting in the earth’s crust may account for many geologic phenomena, such as the raising of old coastlines to new heights.

Other possible evidence of a drastic change: Remains of mammoths and rhinoceroses have been found in different parts of the earth. Some of these were found in Siberian cliffs; others were preserved in Siberian and Alaskan ice. (PICTURE, Vol. 1, p. 328) In fact, some were found with food undigested in their stomachs or still unchewed in their teeth, indicating that they died suddenly. It is estimated, from the trade in ivory tusks, that bones of tens of thousands of such mammoths have been found. The fossil remains of many other animals, such as lions, tigers, bears, and elk, have been found in common strata, which may indicate that all of these were destroyed simultaneously. Some have pointed to such finds as definite physical proof of a rapid change in climate and sudden destruction caused by a universal flood.

Of course, the science of plate tectonics has proved all such geological speculations to be complete nonsense. Since the late 1980s, the Writing Department seems to have quietly accepted this science, although I’ve seen good evidence that this acceptance gradually appeared throughout the 1980s.

In 1986 I traveled East to visit family. While there, I visited a JW friend from college days. We had been very friendly and had kept in touch. We got on the subject of my spirituality (by that time I had been ‘inactive’ for years), and that led to my explaining my issues with Noah’s Flood. He suggested writing to a JW who had written a 100-page essay defending the Society’s views about there being no Ice Ages, and such things as mentioned above. I wrote, and the man sent back a brief, apologetic reply explaining that his essay was no longer valid because the Society had changed its teaching on all those things. He explained that, some time in the early 1980s, the Society (apparently the Writing Dept. as a whole) changed its view on ice ages and such, and now admitted that ice ages and all manner of other things it had denied really did happen. This became for me yet another nail in the coffin of my trust in Watch Tower honesty. Why was such a major change not clearly admitted in the publications? The obvious answer involves saving face, as well as not wanting to lose members who would realize they had been taught falsehoods for decades.

In my four decades out of the JW religion, I’ve met many people who dropped out because of having the Society’s intellectual and scholastic dishonesty rubbed in their faces. An honest person can only stand so much dishonesty on the part of those he once viewed as spiritual authorities who claim to speak for God before he realizes that he has been lied to.

²⁴ *Insight*, Vol. 1, p. 610.

Clearly then, because of its overriding intellectual dishonesty demonstrated over a period of decades, the religion of Jehovah’s Witnesses does not measure up to Bible standards of honesty. It fails to measure up to what it claims is God’s Word.

What course of action does the Watch Tower Society recommend for someone who finds that his religion does not measure up to God’s Word? The September 8, 1987 *Awake!* contained articles directed toward Lutherans to answer this question for them. One article is built around quotations from sermons of Dietrich Bonhoeffer, a Protestant theologian executed by the Nazis. The article makes several points about the deprecating view of the Bible held by some Protestant theologians and about other deficiencies in Protestant religions. Consider the points the articles made on pages 8, 10, and 11:

Note the following excerpts from some of his sermons. Ask yourself: What would heeding his words mean for the Lutheran Church? for *my* church?

“In religion only one thing is of essential importance, that it be true.” [Quoting from Bonhoeffer] This agrees with what Jesus said: “God is a Spirit: and they that worship him must worship him in spirit and in truth.”—John 4:24; see also John 8:32; 14:6; 16:13.

Are you sure that everything your church teaches is really true?

Then under the subheading “If Your Church Fails to Act, Will You?” the article said:

If, after making an honest investigation, you are less than pleased with what you see, do more than just complain. A journalist, while commenting on Karl Barth’s statement that a church is its members, logically concluded: “Church members ... are responsible for what the church says and does.” So ask yourself: Am I willing to share responsibility for everything my church says and does?

You may sincerely believe that your church is no part of false religion that God says he will soon destroy. But your life depends upon being 100 percent sure. Are you?

For those of other religions, Jehovah’s Witnesses set absolute truth as the criterion—everything should be “really true”. Members should be “100 percent sure” about their religion. If they are “less than pleased” with what they see, they should “do more than just complain”, because they share responsibility for “everything [their] church says and does”.

This is precisely what I have done.

Statements from November 2017 JW Broadcasting Video:

Splane 1:42: “This month I’d like to talk about the efforts Jehovah’s organization is making to produce literature, publications, articles, that are as accurate as possible. We’re going to talk about accuracy, accuracy of statement.”

Splane 2:04: “Now first, what’s the responsibility of the writer of the article? When a writer submits an article for publication, he is expected to supply references from reputable sources to back up the fact that he’s included in his article, and our research department will use those references to check the accuracy of everything. Reliable, respected sources.”

Splane 2:25: “What do we mean by a reliable source? Well first of all, we go with encyclopedias, books, magazines, and then, newspapers, basically in that order. We prefer encyclopedias over books, books over magazines, and magazines over newspapers generally because newspaper editors have a hard time checking their facts; they have a very limited time in which to check their facts. So even encyclopedias, though, and books, get updated, so we have to go with the latest editions of those. We have to make sure that our sources are reliable.”

Splane 3:06: “Now, when a writer quotes an expert, our researchers will ask, ‘Who’s this expert? What’s his reputation? Is he working for a particular organization? Does this organization have an agenda? Is it a special interest group?’ If we find that the goals of the organization are questionable, we won’t use the quote, even if it’s a really good quote.”

Splane 3:33: “[Very often a writer will supply two or three pages of photocopies before and/or after a quote of interest.] In that way, our researchers can examine the quote in context, to make sure that what we’re seeing in print is really what the author of the quote had in mind.”

Splane 4:02: “For example, an evolutionist might make a statement which, on the surface, appears as to confirm his support of creation. Or perhaps an atheist will make a statement that seems to indicate that he believes in God. But when you examine the quote in context, you realize that isn’t what the author had in mind at all. We would never *deliberately* distort a quotation. We try very hard to use all of our quotations in context.”

Splane 4:31: “Now, it’s important to keep up with the very latest research, as something that was stated years ago as a fact may have been disproved... from time to time we have to adjust our view of some historical point. We have to check, check, check.”

Splane 5:09: Begins giving examples of how Watch Tower writers are careful to check their facts in relatively minor instances. Some examples of inaccurate statements in earlier Watch Tower literature are given, along with an explanation of the inaccuracy. But Splane fails to explain up front that these are corrections to the earlier Watch Tower statements, thus giving the impression to naïve readers that they are from non-Watch Tower literature. Only at the very end of these examples does Splane make a vague reference (17:00) to this: “The statements were based on the best research we had at the time.” All these things clearly demonstrate the Society’s proclivity to strain out the gnat and swallow the camel.

Splane 17:20: “When credible research reveals that we have to adjust or tweak a statement that we made in the past, we do so without hesitation. Our goal is to provide information that is as accurate as possible, because we know that you brothers and sisters use this information, you quote it in the field ministry, you use it in your public talks, and so we want to make sure that our brothers are fed with the most accurate spiritual food possible. We’re imperfect, of course, and we are going to make mistakes. And when we do, we have to correct them. Our goal is to do the best we can in all our imperfection.”

Splane 18:00: “Well how does it make you feel? I know how it makes me feel. I’m grateful that Jehovah’s organization takes accuracy so seriously.

Examples of Inaccuracy In Watch Tower Literature

Hundreds of examples of inaccuracy can be found in Watch Tower literature. This inaccuracy is especially evident in publications that criticize the scientific Theory of Evolution, so I will examine several major publications on the evolution/creation controversy and related topics. This examination will prove my point.

Note that, because this paper is oriented toward people with relatively little science education, most source references are easy to access and are suitable for non-scientists, such as books for laymen, Wikipedia, YouTube videos, etc. Normally these contain pointers to solid scientific source references.

Bad Source References: Crackpot and Incompetent Authors

Watch Tower writers use a wide variety of sources to back up their arguments. These sources range in quality from solidly scientific to nonsense produced by crackpots. Watch Tower writers have often demonstrated their inability to sift the wheat from the chaff by referencing nut jobs as if they were reputable scientists, as shown below.

I again quote author Alan Rogerson:²⁵

A long acquaintance with the literature of the Witnesses leads one to the conclusion that they live in the intellectual ‘twilight zone.’ That is, most of their members, even their leaders, are not well educated and not very intelligent. Whenever their literature strays onto the fields of philosophy, academic theology, science or any severe mental discipline their ideas at best mirror popular misconceptions, at worst they are completely nonsensical.

Many of the authors discussed below are discussed in much more detail in Ronald Numbers’ *The Creationists* (1992).

Isaac Newton Vail (1840-1912):

The father of an early form of the “vapor canopy” idea, Vail was instrumental in promoting various “flood geology” notions. He was a Pennsylvania Quaker schoolteacher and oil and gas prospector. He extrapolated from the old scientific nebular hypothesis of the origin of the solar system to his “annular theory of earth history”. According to this, the earth was originally surrounded by Saturn-like rings or canopies of aqueous vapor, which one by one collapsed on the earth, burying fossils in “a succession of stupendous cataclysms, separated by unknown periods of time”. Noah’s Flood resulted from the last remnant of these rings. These ideas were first published in 1874 in a pamphlet titled *The Waters Above the Firmament: The Earth’s Aqueous Ring; or, The Deluge and Its Cause*. In 1885 Vail published a 400 page book titled *The Story of the Rocks; or, The Earth’s Annular System*, and in 1902 and 1912 the book *The Earth’s Annular System: or, The Waters Above the Firmament*. Vail’s ideas were accepted in toto by the Watch Tower Society and taught until the mid-1960s. The earliest reference to Vailian notions is in the December, 1881 issue of *Zion’s Watch Tower* (pp. 1-2; 299-300 *Reprints*). The first explicit mention of Vailian notions is apparently in the December 1, 1912 issue of *The Watch Tower* (pp. 372-3; 5139-5140 *Reprints*). Vailian notions formed a major part of C. T. Russell’s *Photo-Drama of Creation* (1914), Rutherford’s 1927 book *Creation*, and chapter 4, “Earth’s Creation”, of the 1943 book *The Truth Shall Make You Free*. The *Watch Tower Publications Index 1930-1985* lists six

²⁵ Alan Rogerson, *Millions Now Living Will Never Die: A Study of Jehovah’s Witnesses*, p. 116.

instances where the “annular theory” is referenced in WTS publications; the last is to a July 8, 1956 *Awake!*, where the notion of rings was apparently dismissed, but not really. The notion of a vapor canopy was firmly supported.

That the Watch Tower Society taught explicitly Vailian notions through the mid-1960s can be seen in the following:

When [Genesis] says that the springs were broken and the floodgates were opened it means that God caused the forces that held the great water canopy in suspension to be overcome and thus permitted the waters to pour down upon the earth, not in any global splash but as through floodgates into certain channels, particularly at the poles. [*The Watchtower*, September 15, 1962, p. 575]

Up until Noah’s six hundredth year of life the ‘heavens in ancient times’ were different or had a feature different from what the heavens or outer space have now. They had a water ring high in suspension above the earth and containing billions of tons of water. According to Genesis 1:6-8, God’s word of command put that water ring up there in the heavens. It covered the earth like a canopy, so that the earth was standing ‘in the midst of water by the word of God.’ [*The Watchtower*, January 15, 1964, pp. 54-55]

The author of the 2nd quotation appears not to know the difference between a “ring” and a “canopy”.

Sometime between 1961 and 1967 the Society seems to have got hold of Morris and Whitcomb’s *The Genesis Flood*, and adapted many of its ideas to previous JW notions on creation and the Flood. In the 1967 book *Did Man Get Here By Evolution Or By Creation?* there appeared for the first time a raft of new source references, many of which also appeared in *The Genesis Flood*. The Society also changed many of its older notions, updating them in accord with ideas set forth in Morris and Whitcomb’s book. For example, the Society finally jettisoned the explicitly Vailian idea of a “water ring” and replaced it with the “vapor canopy” idea espoused in *The Genesis Flood*. It continued to teach that the “creative days” were 7,000 years long whereas Morris and Whitcomb taught six-literal-day creationism.

From 1965 to about 1980, Watch Tower writings on evolution and creation often closely followed those found in young-earth creationist literature, except for the six-literal-day aspect. From 1967 until about 1980-1983 the Society closely followed Morris and Whitcomb’s ideas on flood geology, such as explicitly denying the existence of ice ages, claiming that most of the earth’s sedimentary strata formed during Noah’s Flood, and so forth. It’s quite an eye-opener for someone raised as a JW during those years to find how much Watch Tower teaching at that time had in common with that of its arch-enemies—those trinitarian, hellfire and world-to-be-burned believing, Satanic members of Christendom like the Seventh-Day Adventists and the Fundamentalist Christian community.

By about 1980-1983, apparently about the time the Society first roundly condemned young-earth creationist beliefs, it silently dropped its notions of “flood geology” that it had been teaching in one form since 1881 and in another form since 1967. Of course, the Society never explicitly admitted abandoning these teachings in its public literature. What it did was lump flood geology in with “scientific creationism” and then vaguely hint that it rejected the latter.

An article in a 1983 *Awake!*²⁶ presented the Watch Tower Society’s new view of the implications of the 1982 “creationism” trial in Little Rock, Arkansas:

[scientific creationism] asserts that the earth and everything that lives on it are the result of a recent [6,000-10,000 years ago] act of creation, and that all the geologic strata with their fossils resulted from a single worldwide Flood... [Creationist] teaching that the earth and even the universe are less than 10,000 years old

²⁶ *Awake!*, March 8, 1983, article “Creationism—Is It Scientific?”, pp. 12-15.

contradicts all the findings of modern science... Geologists can point to their measurements of geologic processes that extend far beyond that narrow time frame. Ocean sediments have accumulated over far more than 10,000 years. The time to build mountains and wear them down is measured in millions of years. For continents to drift apart and form oceans takes hundreds of millions of years. To say that all of this goes back only 10,000 years is simply absurd in the eyes of geologists... Speaking of dinosaurs, where do they fit into the creationists' scheme of things? In their view, human beings and dinosaurs and every other kind of animal, extinct or extant, lived on earth at the same time before the Flood. They were all swept away together in a grand mélange by the Floodwaters. How, then, do they account for the orderly sequence of fossils in sedimentary rocks, starting with simple forms of life in the lower strata and followed by increasingly diverse and complex creatures in higher strata? They can only offer a set of implausible and contradictory theories as to how all kinds of plants and animals could have been sorted out of the potpourri of carcasses and laid down in separate layers... Trying to defend their arbitrary structure of "creation science" with such weak, strained hypotheses, they were soundly rebutted by the scientists' testimony at Little Rock. They were left without any credible claim to being scientific.

A 1986 *Watchtower*²⁷ made it clear that such "creationism" is not only unscientific but unscriptural:

In recent times, some fundamentalist religions have put forward creationism as the answer to evolution. But in doing so, they make a claim that is both unscriptural and unbelievable. It is that the heavens, the earth, and everything on the earth were created by God in 6 days of 24 hours each—yes, in just 144 literal hours!

Henry Howorth (1842-1923):²⁸

Politician, lawyer, amateur historian, and armchair geologist, Howorth was a prolific writer on various topics, including his view that there were no "ice ages". He claimed that the evidence real geologists interpreted as for ice ages was really evidence for one massive flood a few thousand years ago. He rejected the idea of *one universal flood*—the biblical Noah's Flood. His books on flooding were titled *The Mammoth and the Flood* (1887), *The Glacial Nightmare and the Flood* (1893), and *Ice or Water* (1905; see bibliography). Howorth did no exploration in the northern regions about which he wrote, but collated and interpreted the writings of others, often adding spin in the direction of his views.

Howorth's basic idea was that the remains of animals in the Arctic were due to one massive flood event that killed and buried them simultaneously. This is patently false in view of modern evidence. In the last period of significant glaciation between about 115,000 and 12,000 years ago, glaciers usually covered much of the Arctic, but far from all of it. Glaciers advanced and retreated, with severe cold periods ("glacial periods") alternating with warmer periods ("interglacial periods"). The most recent glacial period is often called "the last ice age" but that is not accurate.

Howorth never actually argued, or presented real evidence, for his claim of "just one recent flood event". He merely *assumed* it, and via the fallacy of bias confirmation marshaled evidence in favor of his desired conclusion. The many pseudoscientists and crackpots that have followed his claims have done the same.

There have actually been several major "ice ages" during the earth's history.²⁹ Over long periods of time the earth's climate has gone from much warmer than today to much colder, as tectonic forces moved continents around and reconfigured them. Sea level has varied greatly.

One such ice age lasted from about 720 to 635 million years ago.³⁰ It is often called "snowball earth", although its exact disposition remains controversial, and previous major glaciations have also

²⁷ *The Watchtower*, April 1, 1986, pp. 12-13.

²⁸ https://en.wikipedia.org/wiki/Henry_Hoyle_Howorth

²⁹ https://en.wikipedia.org/wiki/Ice_age

³⁰ <https://en.wikipedia.org/wiki/Cryogenian>

been called by that name.³¹ Glaciers reached the tropics in many regions, although it should be remembered that the continents little resembled today's continents.

Between these major glacial periods, the earth was warmer, often much warmer than today. Sea level rose and the continents often had large, shallow interior seas. For example, the Western Interior Seaway of North America³² existed during the mid-to-late Cretaceous period³³ (roughly 120 to 65 million years ago). Extensive sediments were laid down which today are prolific sources of marine fossils.

The latest major glaciation is called the Quaternary or Pleistocene glaciation.³⁴ It began 2.6 million years ago and continues today. Within it were alternating glacial and interglacial periods lasting about 41,000 to 100,000 years. The latter period is linked to the shape of the earth's orbit around the sun, which varies from nearly circular to more elliptical with a period of 100,000 years.

About 115,000 years ago the last interglacial period ended and the Last Glacial Period began.³⁵ This is the time usually referred to as "the last ice age". Between about 15,000 and 10,000 years ago this period warmed sporadically, with sea level rising up to 130 meters (425 feet) to today's level by about 8,000 years ago.³⁶

During most of the Last Glacial Period, much of North America, from the Arctic south to the northern United States, was ice-covered. Much of northern Europe, from Britain to western Siberia, was fully ice-covered. The region from central Siberia to Alaska was mostly free of ice due to arid climate conditions. The region between easternmost Siberia and Alaska, called Beringia,³⁷ or the Bering Land Bridge, was dry land and partly ice-covered. The region between Britain and continental Europe, often called Doggerland,³⁸ was dry land inhabited by animals and people.

The northern part of the huge area from western Siberia eastward to Canada's Yukon had a climate different from anything seen today. It produced what is now called the *mammoth steppe*,³⁹ which was nothing like today's swampy tundra. Lasting some 100,000 years, it was fairly arid but extremely productive of herbs, grasses, willow shrubs, and other plants not usually seen in today's tundra. Large herbivores were mostly steppe bison, horse, and woolly mammoth. Other herbivores included woolly rhinoceros, musk ox, reindeer, elk, and all manner of small animals. Predators included cave lions, wolves, brown bears, and cave hyenas.

Several loony authors have claimed that tropical vegetation has been found unchewed in the mouths of "quick-frozen mammoths", but that is completely wrong. For example, the Berezovka mammoth (see page 23) had remains of buttercups (*Ranunculus*) in its teeth, which have been claimed by these nutters to be exclusively tropical to temperate species. But there are some 600 species of buttercup, some of which, such as *Ranunculus arcticus*,⁴⁰ are found today largely in Arctic regions. So it is no surprise that the Berezovka mammoth might have been munching on Arctic buttercups when it stepped into an icy, mud-filled sinkhole in the summer permafrost and drowned.

³¹ https://en.wikipedia.org/wiki/Snowball_Earth

³² https://en.wikipedia.org/wiki/Western_Interior_Seaway

³³ <https://en.wikipedia.org/wiki/Cretaceous>

³⁴ https://en.wikipedia.org/wiki/Quaternary_glaciation

³⁵ https://en.wikipedia.org/wiki/Last_Glacial_Period

³⁶ https://en.wikipedia.org/wiki/Sea_level_rise

³⁷ <https://en.wikipedia.org/wiki/Beringia#:~:text=Beringia%20is%20defined%20today%20as,tip%20of%20the%20Kamchatka%20Peninsula.>

³⁸ <https://en.wikipedia.org/wiki/Doggerland>

³⁹ https://en.wikipedia.org/wiki/Mammoth_steppe

⁴⁰ <http://svalbardflora.no/oldsite/index.php?id=586>

It was largely during the many glacial periods of the past 2.6 million years that substantial amounts of vegetation accumulated in today's permafrost regions, which along with creeping flows of partially frozen soil (solifluction), form today's extensive deposits of Arctic permafrost. This soil was largely composed of loess.⁴¹ In Alaska, the loess contains significant amounts of volcanic dust (tephra) blown in from big volcanoes in the Aleutian Islands. Most Alaskan loess is silt blown from glacial margins where, during summers in cold periods, runoff from the glaciers deposited huge amounts of "rock flour"—silt from glacial-margin floodplains that dried up during summer. The Glacial Periods were extremely dusty, and loess derived from glaciers and deserts accumulated worldwide.

When climate began warming at the end of the last cold cycle, the mammoth steppe gradually gave way to modern tundra and to boreal (technical term for northern) forests that now cover much of northern North America and Siberia. The productive herbs and grasses of the mammoth steppe were reduced and no longer capable of supporting an extensive large herbivore population. The establishment of human hunters in these regions likely contributed to population reductions and ultimate extinction. There is also evidence that a large meteor smashed into Canada or Greenland around 12,000 years ago and contributed to the extinction of the "megafauna", although this is debated among paleontologists.

While most of the so-called megafauna went extinct by around 10,000 years ago, a small population of mammoths existed until about 6,000 years ago on St. Paul Island, Alaska, while the mammoths of Wrangel Island⁴² survived until about 4,000 years ago.

For hundreds of years the origin of today's permafrost was very poorly known. Where did the thick deposits of muck and ice containing animal bones come from? Apparently from a variety of processes during the past 2.6 million years of ice-age conditions. During the dry glacial periods, loess derived from glacial margins accumulated everywhere. During the sporadic interglacial cycles, streams and rivers flowed strongly and redistributed sediments like loess from higher elevations into lower elevations. This resulted in flooding and mudflows, which buried all manner of material, including forests. During the longer glacial periods, much material was also buried, often slowly by solifluction in summer (slow creep of saturated soil downslope; partially frozen soil often creeps downslope) and by loess accumulation in winter.

In Alaska, gold mining operations and geological explorations have revealed that most of the so-called muck deposits are actually *layered deposits* alternating among loess, volcanic ash, forest soil, peat, and other materials. Such deposits clearly accumulated over long periods of time. No surprise, since glaciations have been occurring for 2.6 million years and landscapes have been around for far longer.

A good picture of such accumulation in a gold-containing stream bed is found in Figure 2 in an article in *Scientific Reports*:⁴³

⁴¹ <https://en.wikipedia.org/wiki/Loess> Wind-blown dust consisting of silt, silty clay and fine sand.

⁴² https://en.wikipedia.org/wiki/Wrangel_Island

⁴³ <https://www.nature.com/articles/s41598-017-16958-2.pdf>

"Impact-related microspherules in Late Pleistocene Alaskan and Yukon "muck" deposits signify recurrent episodes of catastrophic emplacement", *Scientific Reports*, 2017 Nov 30;7(1):16620. doi: 10.1038/s41598-017-16958-2 page 3.

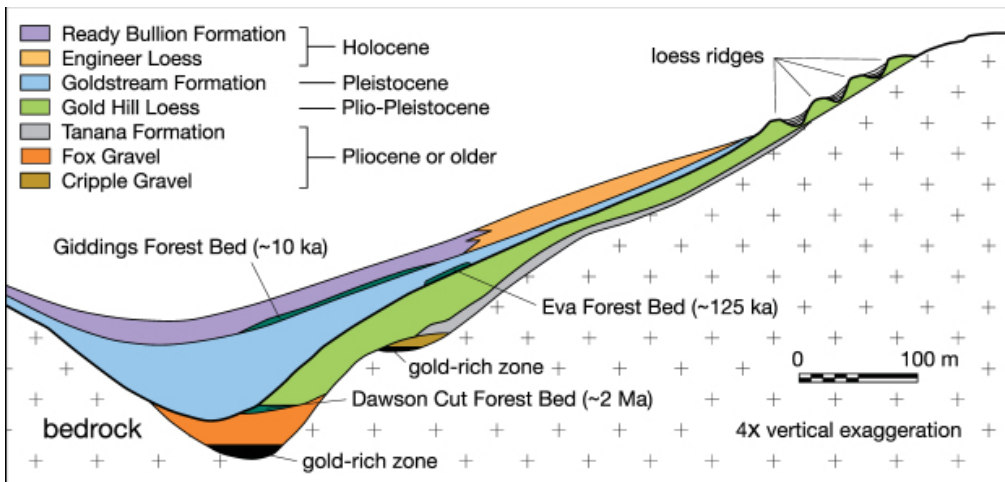


Figure 2. Schematic cross section of creek valley sediments near Fairbanks, Alaska showing stratigraphic relationships between primary loess (Gold Hill and Engineer Loess), retransported loess or “muck” (Goldstream and Ready Bullion Formations), forest beds (Dawson Cut, Eva, and Giddings), mass-wasting deposits (Tanana Formation), and gold-bearing gravel (Fox and Cripple Gravels).

Note that at the bottom of the stream bed is gold-bearing gravel, which is overlain by a forest bed, then by two separate loess deposits, one of which is overlain by the “Eva Forest Bed”, overlain by a loess deposit, overlain by the “Giddings Forest Bed” (Holocene or recent age), overlain by a layer of retransported silt (“Ready Bullion Formation”) and the “Engineer Loess”. Being layered, relatively ordered deposits, these were not the supposedly jumbled, “icy, mucky dumps” described by various dishonest or nutjob authors.

The “Eva Forest Bed” is dated to about 125,000 years ago. Under it is the “Gold Hill Loess”, a solifluction deposit dated to greater than 140,000 years ago and possibly more than 2 million years ago. Over it is the “Goldstream Formation”, a retransported loess deposit dated to between 10,000 and 115,000 years ago. The deposits on top of them are less than 10,000 years old. Clearly, both the physical layering and the age of the layers point to an extended time for accumulation, not to a one-time catastrophic flood.

Clearly, then, the processes that produced local mixing or “jumbling” of the muck deposits occurred *after* the orderly layers were put down.

A more detailed picture can be found in a geological paper from *GeoSciences World*.⁴⁴ This paper contains extensive descriptions of the authors’ explorations in Alaska and firmly puts to rest crank claims of “icy, mucky dumps” discussed in this paper. Note the beginning of the Abstract (p. 1):

The Eva Interglaciation Forest Bed represents a frozen, buried, ancient boreal forest in the Yukon-Tanana Upland of east-central Alaska. It consists of excellently preserved peat lenses, sticks, roots, and logs as well as rooted and unrooted stumps of trees, mainly spruce and birch. Consistent with the modern boreal forest, the largest and most common tree in the fossil forest is spruce, mainly white spruce (*Picea glauca*). Remains of birch trees are common, mostly *Betula papyrifera*. The forest remains were buried by loess that became frozen and so are well preserved. None of the wood is mineralized. Many of the fragments are black from burning, suggesting forest fires were widespread in the Yukon-Tanana Upland during the interglaciation. Also, evidence

⁴⁴ <https://alanfeuer.org/GeoSciencesWorldPewePaper319.pdf> p. 10

“Eva Interglaciation Forest Bed, Unglaciated East-Central Alaska: Global Warming 125,000 Years Ago”

Péwé, T. L., Berger, G. W., Westgate, J.A., Brown, P. M., and Leavitt, S. W., 1997: Boulder, Colorado, Geological Society of America Special Paper 319.

is presented for the first time of the existence of spruce bark beetles (*Scolytidae*) during the last interglaciation in Alaska.

The authors describe white and black spruce trees as forming the bulk of forest vegetation embedded in the deposits of interest. Such spruce species are exclusively found in northern regions, including the Arctic. This again proves that these deposits are not tropical. Furthermore, they state that the forest remains “were buried by loess”, which of course is wind-blown dust, not cataclysmically deposited “muck”. Consider that a giant flood sweeping across a forested area would necessarily bury massive amounts of ripped-up material in big piles, not in the orderly sequences of layers described above. Such piles would obviously include far larger fragments than silt and sand, yet the Alaskan loess contains no rock fragments larger than fine sand and silt.

Péwé, et al., conclude (p. 50):

One hundred forty thousand years ago, a cloud of volcanic ash from the Aleutian Chain 1,000 km to the southwest passed over the Yukon-Tanana Upland, depositing a white gritty tephra layer on a cold, arid, treeless steppe, grass-dominated landscape (Westgate, 1988; Guthrie, 1990; Schweger and Matthews, 1985). This ash, now termed the Old Crow tephra, blanketed the loess-covered terrain and was soon buried by additional Gold Hill Loess and younger tephra layers. Permafrost was widespread, and in winter the ground cracked to allow the massive, ubiquitous ice wedges to receive moisture and continue to enlarge.

About 10,000 or 15,000 years later the windy, dry, harsh glacial climate, with a mean annual air temperature of perhaps -8°C to -10°C or colder in the lower slopes and valley bottoms of the Yukon-Tanana Upland, began to warm and precipitation increased. Evidently, this loess landscape at the end of glacial time exhibited exposed soil within an open grassy steppe (Guthrie, 1990). Before a protective boreal forest could be well established, global climatic change caused warmer temperatures that initiated thawing of the underlying permafrost and melting of the massive ice wedges. This extra running water, plus increased precipitation after the arid glacial time, cut into the treeless landscape of massive silt. Intensive gullying and slumping of loess blocks occurred first, and then smoothing of the thermokarst terrain occurred. With the declining of loess deposition, the warming of mean annual temperature to more than 0°C , and the increasing of precipitation, the Eva Interglaciation boreal forest became widespread, and some plants (and insect taxa in Canada) extended even farther north in central Alaska than today.

During the Eva Interglaciation, the lower slopes and valley bottoms of the Yukon-Tanana Upland did not resemble a permafrost environment such as exists today. Forested open-system pingos (Péwé, 1982, fig. 61) were absent; as were large-scale ice-wedge polygon patterns, beaded drainage, and cave-in lakes, all of which exist in central Alaska today (Péwé, 1982, figs. 24, 60). The Eva boreal forest of central Alaska blanketed a terrain with a climate milder than now with a mean annual air temperature warmer than 0°C , resulting in extensive degradation of permafrost.

A few comments on all of the above:

During warmer times, some permafrost partially melted, forming a type of terrain called thermokarst,⁴⁵ which contains many icy, muddy hollows sometimes deep enough to entrap unwary animals.⁴⁶ Sometimes animals or their carcasses became entrapped and preserved in what became permafrost. During summers, some permafrost partially melted and formed sinkhole traps into which larger animals like mammoths could sink, die, and become part of the permafrost when the next winter came. Apparently this is what happened to the Berezovka mammoth and perhaps to other famous

⁴⁵ <https://en.wikipedia.org/wiki/Thermokarst#:~:text=Thermokarst%20is%20a%20terrain%2Dtype,Himalayas%20and%20the%20Swiss%20Alps.>

⁴⁶ For a better picture, see <https://en.wikipedia.org/wiki/Periglaciation>

frozen animals such as the mammoth babies Dima,⁴⁷ Lyuba,⁴⁸ and Yuka⁴⁹. Note that all of these carcasses have been dated to no more than 50,000 years.

As with all geological processes, from time to time exceptional circumstances resulted in exceptional burials of animal remains. A YouTube video describes 14 such cases.⁵⁰ In most cases, the circumstances of burial indicate normal processes of death, burial, and preservation.

For example, one of the more informative discoveries was of the partial carcass of a steppe bison (now extinct) nicknamed Blue Babe.⁵¹ It died about 36,000 years ago when lions killed and partially ate it. As the flesh froze, one lion broke off a piece of molar which remained in the meat. The deposits in which the bison was found indicate that, over a period of a couple of years, solifluction gradually buried it and it froze solid.

Obviously, since the bison was killed and eaten by lions, it was not buried in a giant flood and then “quick frozen”. Once again the circumstances prove that this did not happen in a tropical environment.

The interesting and informative book *Frozen Fauna of the Mammoth Steppe: The Story of Blue Babe* (R. Dale Guthrie, 1989) tells the story of the discovery of Blue Babe. It is a must read for anyone interested in the frozen animals of the Arctic.

Another example, mentioned earlier on page 10, is the Berezovka mammoth. A reconstructed version, on display in the Zoological Museum in St. Petersburg, Russia, is pictured below. It died about 35,000 years ago. More details can be found beginning on page 135 of this paper.

Compare this to the similar picture in the *Insight* book (*Insight on the Scriptures*, Vol. 1, p. 328), the *Creation* book (*Life—How Did It Get Here? By Evolution or by Creation?* p. 203), the *God’s Word or Man’s* book (p. 114), and to the depiction in the *Evolution* book (*Did Man Get Here by Evolution or by Creation?* 1967, p. 106).



All manner of evidence shows that the mammoth was not buried in a massive flood, nor was it “quick frozen”. Its hip, shoulder blade, and some ribs were broken, and its position in the frozen ground, as well as other evidence, show that it had fallen into a hole, suffocated and been buried. Substantial decomposition had taken place before final freezing.

⁴⁷ [https://mummipedia.fandom.com/wiki/Dima_\(Mammoth_Calf\)#:~:text=The%207%2D8%20month%20old,tall%20and%2045%20inches%20long.](https://mummipedia.fandom.com/wiki/Dima_(Mammoth_Calf)#:~:text=The%207%2D8%20month%20old,tall%20and%2045%20inches%20long.)

⁴⁸ [https://en.wikipedia.org/wiki/Lyuba_\(mammoth\)](https://en.wikipedia.org/wiki/Lyuba_(mammoth))

⁴⁹ [https://en.wikipedia.org/wiki/Yuka_\(mammoth\)](https://en.wikipedia.org/wiki/Yuka_(mammoth))

⁵⁰ <https://www.youtube.com/watch?v=xL1980fr2K0>

⁵¹ https://en.wikipedia.org/wiki/Steppe_bison
<https://www.uaf.edu/museum/press/spotlight/blue-babe/>

For an in-depth but dated analysis of the Flood, see my 1991 essay “The Flood”⁵². For many details about the Berezovka mammoth see my essay “The Polar Regions”⁵³, and these books: R. Dale Guthrie, *Frozen Fauna of the Mammoth Steppe*, p. 3;⁵⁴ Bjorn Kurten, *How To Deep-Freeze a Mammoth*, pp. 51-52; Antony J. Sutcliffe, *On The Track Of Ice Age Mammals*, p. 49.

Another example is called the Selerikan Pony, discovered by Siberian miners in 1968.⁵⁵ The miners found two legs hanging down from the mineshaft ceiling, on which the miners hung lanterns. Later, scientists found most of the body. About 37,000 years ago it seems to have become mired in water-saturated sediments up to its neck. After that, predators removed the head and neck. Then it froze in the cold hole into which it fell, as pictured below.

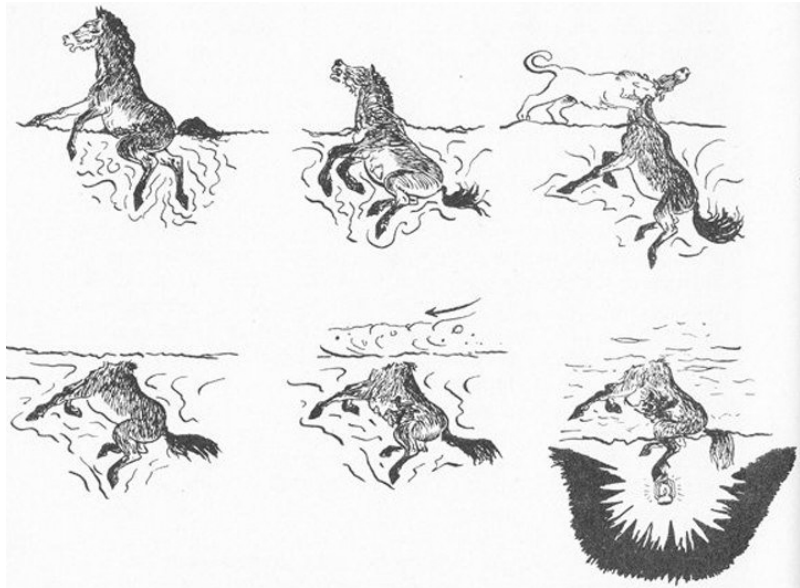
Obviously, if predators removed the head and neck, it was not buried in a massive flood, nor was it “quick frozen”.

The above three examples can be read about in more detail in *Frozen Fauna of the Mammoth Steppe: The Story of Blue Babe*. Parts of this book can be found at Google Books.⁵⁶

In view of the above information, there is no evidence that at some single point in time large numbers of large mammals became extinct due to a single catastrophe and that there was a simultaneous sudden change in climate that instantly brought extreme cold to the Arctic. There certainly was a *gradual* change in climate from about 18,000 through 10,000 years ago, during which many animals became extinct, but it was a warming trend that signaled the end of the last ice age.

There is no evidence for the claim that “millions of mammoths were killed” simultaneously and then “quick-frozen in Siberia”. Once again this is due to the horrible misinterpretations, exaggerations, and embellishments of Howorth, Velikovsky, Vail, and others.

Henry Howorth is referenced in *Awake!*, Sept. 22, 1970, pp. 11-12; *Awake!*, June 22, 1963, p. 9; *Awake!*, Feb. 8, 1957, pp. 25-26; *Awake!*, Aug. 8, 1952, pp. 19-22; *Awake!*, Aug. 22, 1952, pp. 7-11; *Awake!*, Sep. 8, 1952, pp. 4, 6, 8; *Awake!*, June 22, 1949, p. 5.



⁵² <https://critiquesonthewatchtower.org/old-articles/2006/02/part-1-general-description-of-flood.html>

⁵³ <https://critiquesonthewatchtower.org/old-articles/2006/02/part-2-polar-regions.html>

⁵⁴ <https://books.google.com.sl/books?id=cuQhsNQcKMYC&printsec=frontcover#v=onepage&q&f=false> p. 3.

⁵⁵ <https://books.google.com/books?>

[id=KZnxAQAAQBAJ&pg=PA31&lpg=PA31&dq=selerikan+pony&source=bl&ots=oIX2PQGsxQ&sig=ACfU3U2jVDw3AsMS3eiuA0aeag0ceGXBsg&hl=en&sa=X&ved=2ahUKEwiYqK3Y9ufvAhUXHM0KHfhmAMYQ6AEwEXoECBMQA#w#v=onepage&q=selerikan%20pony&f=false](https://books.google.com/books?id=KZnxAQAAQBAJ&pg=PA31&lpg=PA31&dq=selerikan+pony&source=bl&ots=oIX2PQGsxQ&sig=ACfU3U2jVDw3AsMS3eiuA0aeag0ceGXBsg&hl=en&sa=X&ved=2ahUKEwiYqK3Y9ufvAhUXHM0KHfhmAMYQ6AEwEXoECBMQA#w#v=onepage&q=selerikan%20pony&f=false)

⁵⁶ <https://books.google.com.sl/books?id=cuQhsNQcKMYC&printsec=frontcover#v=onepage&q&f=false>

George McCready Price (1870-1963):⁵⁷

The most influential young-earth creationist of the first half of the 20th century, Price was a Seventh-Day Adventist. He taught himself geology to refute evolution and promote young-earth creationism according to the writings of SDA “prophetess” Ellen G. White. He developed or re-invented many of the anti-evolution ideas seen today in young-earth creationist writings, including “flood geology”. Beginning in 1902, Price wrote many pamphlets and books including the seminal *The New Geology* (1923). Henry Morris and John Whitcomb later borrowed many of their ideas from Price in their 1961 book *The Genesis Flood*.

Price is referenced in *Awake!*, Aug. 22, 1952, p. 8. He is also referenced by several of the crackpots listed in this section. For more on Price, see *Science: Good, Bad and Bogus*, Martin Gardner, pp. 6-8, 13, and *The Creationists: The Evolution of Scientific Creationism*, Ronald L. Numbers, 1992, chapter 5.

Immanuel Velikovsky (1895-1979):⁵⁸

In 1950, psychiatrist and amateur historian Immanuel Velikovsky published his first book *Worlds in Collision*, which became a best-seller. Thereafter he published a stream of equally fantastic books. Velikovsky exaggerated the findings of frozen animals, animal remains in caves, and remains in other unusual circumstances. He has come to be regarded as “the very model of a crank.”⁵⁹ Ivan T. Sanderson (see below) likely borrowed some of his information from Velikovsky’s book. Velikovsky borrowed arguments from George McCready Price, and they corresponded after Velikovsky’s book was published (*Science: Good, Bad and Bogus*, Gardner, p. 13).

Here is a summary from pages 4 and 381 of *Science: Good, Bad and Bogus*:

Dr. Velikovsky (he was trained in psychoanalysis) set himself the task of revising the laws of astronomy and physics, and rewriting vast globs of ancient history, to spin an incredible tale about the planet Venus that would ‘explain’ the major miracles of the Old Testament.

The book throws together a jumbled mass of data to support the preposterous theory that a giant comet once erupted from the planet Jupiter, passed close to the earth on two occasions, then settled down as Venus. The first visit to the earth of this erratic comet was precisely at the time Moses stretched out his hand and caused the Red Sea to divide. The manna which fell from the skies shortly thereafter was a precipitate, fortunately edible, of suspended elements in the celestial visitor’s tail. Later the comet’s return coincided with Joshua’s successful attempt to make the sun and moon stand still. The miracles of both Moses and Joshua were the result, Velikovsky informs us, of a temporary cessation of the earth’s spin.

Also see Carl Sagan, *Broca’s Brain*, for more on Velikovsky.

The Watch Tower Society once glowingly reviewed *Worlds in Collision*. The May 8, 1950 *Awake!* (pp. 27-28) described Velikovsky as “an eminent scientist, historian and author” who “digs deep into the scientific fields of archaeology, geology, paleontology, anthropology, astronomy, physics and psychology, and from these brings forth a great mass of evidence proving authenticity of the Bible account” and who has produced “a monumental work of scholarly research”. It said:

In this book the author sets forth the novel theory that millenniums ago a sky-roving comet the size of earth was cast out from Jupiter’s molten mass; that this comet almost collided with the earth and Mars on several occasions; that finally this wandering offspring of Jupiter found an orbit of its own around the sun and has since

⁵⁷ https://en.wikipedia.org/wiki/George_McCready_Price

⁵⁸ https://en.wikipedia.org/wiki/Immanuel_Velikovsky

⁵⁹ Martin Gardner, *Science: Good, Bad and Bogus*, p. xiv

been known as the planet Venus. Throughout the book the attempt is made to prove that when this comet passed within the vicinity of the earth it caused the great catastrophes that befell this globe in times past. Out of the ancient folklore of Arabia, India, China, Tibet, North and South America, and Scandinavia, from accounts found on ancient Egyptian papyri and Babylonian tablets of clay, as well as the record contained in the Bible, links of circumstantial and direct evidence are connected together to make a binding chain for supporting the theory. For example, the book claims that about 1500 years before Christ, that is, at the time of Israel's Exodus from Egypt, the head of this stray comet just missed our globe, thus causing the earth to pass through the tail of the comet. Result? The terrible plagues the Bible says fell upon Egypt. The rivers and lakes were turned to "blood", due to rusty red pigment particles from the comet's tail. This killed the fish, and the stench reached to high heaven. The frogs, lice and flies that plagued Egypt, each in their turn, were brought about by the feverish heat which stepped up the propagation rate of the vermin... The book assumes that not only Egypt, but the whole world, experienced these catastrophes, hence the tribal tales of practically every race of people, which tell of similar things, are given as proof that they occurred. The aftereffects of the comet, the book says, were responsible for the pillar of cloud by day and the column of fire by night that led Israel in their wanderings. The "manna" from heaven was synthesized out of the residue of the comet's elements left in earth's atmosphere. Moreover, a return of the comet some fifty years later accounted for the stoppage of the Jordan river for the Israelites' crossing, the fall of Jericho's walls, the stopping of the sun and moon in their tracks and the casting of sizzling meteor stones on the enemy forces at Gibeon in the days of Joshua. The sun and the moon stood still, it is argued, simply because the comet stopped the earth from turning on its axis for the space of "about a whole day".

While *Awake!* includes a note of caution about accepting Velikovsky's claims at face value, the note itself contains a disclaimer of the caution:

Do Velikovsky's efforts to account for some of the Biblical marvels deny the divine power back of them? Not necessarily, for while his thesis leaves much to be doubted and much more to be explained, yet it shows the hand of Providence in the timing of such spectacular displays of celestial forces, as well as providing for Israel's escape.

As a teenager I read science fiction books. One was *When Worlds Collide* (Philip Wylie, 1933), which I found entertaining. Browsing through the school library's science fiction section, I later found Velikovsky's *Worlds in Collision*, thinking it to be another science fiction story in the same spirit. But as I read through it, I realized that it presented itself as a serious work of history and science, as in its treatment of the plagues of Moses. I realized that, whatever the author was trying to prove, it was a ridiculous book. Now if I, as a 15-year-old, could recognize this, how is it that the author of *Awake!* did not immediately reject it as the work of a nutcase?

Ivan T. Sanderson (1911-1973):⁶⁰

Biologist, naturalist, cryptozoologist (a pseudoscientist), paranormal writer, and catastrophist in the spirit of Immanuel Velikovsky, Sanderson wrote several wild, Velikovsky-style articles and was forced to publish them in the popular media because no reputable science journals would have them.

The 1985 *Creation* book quotes Sanderson:⁶¹

... further evidence that a flood of immense proportions occurred in the not-too-distant past is the great number of fossils and carcasses deposited in icy, mucky dumps. *The Saturday Evening Post*⁶² noted: "Many of these animals were perfectly fresh, whole and undamaged, and still either standing or at least kneeling upright... Here is a really shocking—to our previous way of thinking—picture. Vast herds of enormous, well-fed beasts not specifically designed for extreme cold, placidly feeding in sunny pastures... Suddenly they were all killed without any visible sign of violence and before they could so much as swallow a last mouthful of food, and then

⁶⁰ https://en.wikipedia.org/wiki/Ivan_T._Sanderson

⁶¹ *Life—How Did It Get Here? By Evolution or by Creation?*, p. 203.

⁶² "Riddle of the Frozen Giants", Ivan T. Sanderson, *The Saturday Evening Post*, January 16, 1960.

were quick-frozen so rapidly that every cell of their bodies is perfectly preserved.”

This fits in with what happened in the great Flood. The Bible describes it in these words: “All the springs of the vast watery deep were broken open and the floodgates of the heavens were opened.” The downpour “overwhelmed the earth,” being accompanied no doubt by freezing winds in the polar regions... There, the temperature change would be the most rapid and drastic. Various forms of life were thus engulfed and preserved in frozen muck. One such may have been the mammoth that was uncovered by excavators in Siberia and that is seen in the accompanying illustration. Vegetation was still in its mouth and stomach and its flesh was even edible when thawed out.

It should be noted that *The Saturday Evening Post* did not “note” anything in the above quotation. Rather, it was “noted” by the author, Ivan T. Sanderson, in his article “Riddle of the Frozen Giants”. Attributing editorial weight where there is none is dishonest.

Sanderson’s *Saturday Evening Post* article advanced an idea that was so extreme that no scientific journal would accept it for publication. Actually, the article merely perpetuated the long-standing myth perpetuated by Henry Howorth, Immanuel Velikovsky, and others as described above, about frozen animals in the Arctic. Many of its statements were the same exaggerations or falsehoods given by earlier loons. Many of Sanderson’s statements that clearly refer to the 1899 discovery of the Berezovka mammoth are easily seen to be untrue when compared to the original source material. See pages 23 and 135 for more on this mammoth. Of course, Sanderson gives no references to source material.

Sanderson is referenced in *The Watchtower*, July 15, 1968, p. 421; *Awake!*, Sep. 22, 1974, p. 19; *Creation* (1985), p. 203.

Henry M. Morris (1918-2006) and John C. Whitcomb (1924-2020)

In 1961 Morris and Whitcomb published the extremely influential book *The Genesis Flood*, which has had dozens of printings and is still in print. This book launched the modern-day scientific creationist movement, which spawned several young-earth creationist organizations such as the Institute for Creation Research and Answers in Genesis. Many of the ideas presented are directly taken from George McCready Price’s 1923 book *The New Geology*. They gave almost no credit to Price largely because he had advanced all sorts of wild and discredited ideas from 7th-Day Adventism, whereas Morris was a Southern Baptist and Whitcomb was a member of a branch of the Fundamentalist Grace Brethren Church. These churches consider Seventh-Day Adventism an unchristian cult. Many ideas are borrowed from Immanuel Velikovsky’s writings. The basic theme was six-literal-day creationism along with its theme of “flood geology”. These ideas included that dinosaurs coexisted with man and that there was a pre-flood “vapor canopy”, both of which were also part of Jehovah’s Witness doctrine until about 1980. The “vapor canopy” idea came, of course, first from Isaac Newton Vail and in a modified form from George McCready Price.

Morris and Whitcomb are referenced in *The Watchtower*, July 15, 1968, p. 420; *Is the Bible Really the Word of God* (1969) p. 36; *The Bible—God’s Word or Man’s?* (1989), p. 116.

Reginald M. Daly:

Young-earth creationist, catastrophist and pseudoscientist in the spirit of Immanuel Velikovsky, Daly appears to have written only two books, including *Earth’s Most Challenging Mysteries* (1972). He tries to explain the origin of various geological phenomena from his own unique young-earth creationist and catastrophist perspectives, with much drawn from Henry Howorth, Immanuel Velikovsky, and other pseudoscientific authors.

An example of the Watch Tower Society’s use of this nutcase is found in the June 8, 1975 *Awake!* article “A Worldwide Flood—What Does It Mean to You?”. In discussing evidence in favor of a worldwide flood, it quotes twice from *Earth’s Most Challenging Mysteries* (Reginald Daly, 1972). The first quotation concerns the bones of hippos on the island of Sicily; the second concerns bones from a natural animal trap in Maryland.

Hippos in Sicily

The first quotation in *Awake!* is (p. 7):

Interestingly, in the United States, England, France, southern Spain, Germany, Russia and elsewhere huge fissures in the earth have been found filled with the remains of large numbers of animals. They include mixtures of bones of the elephant, rhinoceros, hippopotamus, reindeer, horse, hog, bear, and many others. One such cavern near Palermo, Sicily, yielded more than twenty tons of bones for commercial purposes. Often these fissures are located on isolated hills at considerable height where animals would be expected to flee from floodwaters that “kept increasing greatly upon the earth.” (Gen. 7:18) With regard to the variety of animal remains found in one bone cave, the book *Earth’s Most Challenging Mysteries* asks [*Awake!* does not give a page number, but it is from page 110]:

“What made rabbits run into the same cave as coyotes? And an antelope with a wolverine and a grizzly? Bones of the mastodon were found, also a few reptiles ... The whole mass of bones was covered and preserved by a flood deposit of gravel and rocks.”

The above is a real dog’s breakfast of misinformation, and it illustrates how crackpot and incompetent authors often borrow from other such authors, creating a chain of misinformation that gets worse with each retelling. Often they embellish or exaggerate or oversimplify other authors’ statements, and fail to check the accuracy of what the other authors claim. They also ignore authors whose writings contradict their favorite ideas. All this has occurred here.

Awake! first speaks of “huge fissures” filled with mixtures of animal bones, for which it gives no examples. Then it speaks of a “cavern” that contained more than 20 tons of bones, implying that this particular “cavern” contained more than 20 tons of a *mixture* of animal bones. But a *cavern* (cave) is not a *fissure* (cleft, crack, crevice); they are separate kinds of holes in the earth,⁶³ and the ways bones accumulate in them are usually quite different. How much trust can a reader put in what is said about geology by an author who does not know the difference between a cave and a fissure?

While *Awake!* gives the impression that this “cavern near Palermo ... yielded more than twenty tons of bones” *of all sorts of animals*, simply reading Daly’s book shows that Daly was quoting yet another author⁶⁴ who said that twenty tons of *hippopotamus* bones—not a *mixture of all sorts of bones*—were “shipped from *around* [not *in*] the one cave of San Circo” [*sic*; should be San Ciro]. And that author explicitly states (p. 51) that “they are the bones almost exclusively of Hippopotami, of which the

⁶³ While there is some overlap in the broadest definitions, in common usage there is not. People might live in a cave, but not in a fissure. “Fissure” generally refers to a long, narrow opening or line of breakage made by cracking or splitting, especially in rock or earth. A crevasse is a fissure in the surface of a glacier. Ice caves can form at the termini of glaciers, but no one competent in the English language would mix up caves and fissures in glaciers, or in anything else.

⁶⁴ Sir Joseph Prestwich in the book *On Certain Phenomena Belonging to the Close of the Last Geological Period and on Their Bearing Upon the Tradition of the Flood*. 1895, pp. 50-53. See

<https://ia802306.us.archive.org/17/items/oncertainphenome00presrich/oncertainphenome00presrich.pdf>

Compare with the far more competent description of the bone fossils given by Sir Charles Lyell:

https://en.wikisource.org/wiki/Geological_Evidences_of_the_Antiquity_of_Man/Chapter_10 Section “Ossiferous Caves in North of Sicily”. This is extracted from Lyell’s 1863 book: <https://www.gutenberg.org/files/6335/6335-h/6335-h.htm> .

remains are very rare in caves”. Again we find that the Watch Tower author claims the opposite of what the author he quoted actually stated.

The other author referenced by Reginald Daly, and by extension the Watch Tower author, as an authority on geology, is Sir John Prestwich. A bit of research on Prestwich, and reading his referenced book, clearly shows that he was essentially another armchair geologist who got most of his information from others who actually traveled to the referenced locations and wrote about what they saw. Prestwich, like Henry Howorth, then put his own spin on such information and came up with his own oddball view of what it all meant.

Writing in 1895, Prestwich might be forgiven for some of his ideas that, in light of modern geology, are quite wrong. Prestwich was a poor and disorganized writer whose writings contained few references to scientifically valid geological information, and consisted largely of his own speculations rather than solidly established geological conclusions. His basic thesis was that, for unknown reasons, at the close of the last glacial period (which he dated between 8,000 and 12,000 years ago) either the land in Europe and around the Mediterranean Sea gradually sank at least 300 meters and then soon rose in a short period of time, or the oceans around the same region gradually rose 300+ meters and then quickly sank. This produced what he called “Submergence”, which had nothing to do with Noah’s Flood—which he dismissed as mere “Tradition”—followed by a quick and more or less violent emergence of the land, which resulted in all manner of violent flooding features that had been misinterpreted by earlier Genesis-influenced geologists as evidence of Noah’s Flood, and was completely misunderstood by then-current geologists. Prestwich gave no mechanism for his supposed rise and/or fall of land and sea.

All of Prestwich’s speculations have been nullified by the modern science of plate tectonics, glaciology, and other 20th-century findings, as well as by far more competent authors. For example, Prestwich claimed that the hippo bones found around the San Ciro cave showed no evidence of rolling by water, from which he concluded that their submergence in water was very short. Yet the above-referenced work by the famous geologist Sir Charles Lyell⁶⁵ states:

Some of these bones have been rolled as if partially subjected to the action of water, and may have been introduced by streams through rents in the hippurite limestone; but there is now no running water in the neighbourhood, no river such as the hippopotamus might frequent, not even a small brook, so that the physical geography of the district must have been altogether changed since the time when such remains were swept into fissures, or into the channels of engulfed rivers.

Lyell’s description indicates a normal deposition of the hippo bones: hippos lived in the region of the San Ciro cave at some unspecified ancient time, and died in the general area surrounding the cave, where they accumulated. Occasionally a few bones got into the cave, likely sometimes brought in by predators. Most were broken up by normal wear and tear, such as when the limestone cliff above weathered and dropped stone fragments on the area below. These fragments formed the “bone-breccia” that Prestwich wrote so much about, which was nothing more than stone fragments with some bones mixed in. Since the hippos were the pygmy *Hippopotamus pentlandi* (see below), which died out on Sicily some 120,000 years ago, all the bones were at least 120,000 years old, which completely disproves Prestwich’s speculations. Since there were upwards of 2.6 million years for hippos to live and die around the cave, plenty of bones could accumulate.

To see why the above is entirely reasonable, note the following: During the development of the science of plate tectonics in the 1950s through 1970s, geologists established that the African tectonic

⁶⁵ https://en.wikipedia.org/wiki/Charles_Lyell

plate has been slowly pushing northward toward Europe and Asia, i.e., the Eurasian tectonic plate, causing mountain ranges such as the Alps to rise in Europe, as well as extensive crumpling of the Mediterranean Sea floor. This has been happening for upwards of 100 million years. The resulting geology of the region around today's Mediterranean Sea is therefore extremely complex and far from fully understood.⁶⁶ The complex crumpling of the margins of the plates, along with volcanism, has resulted in today's hundreds of islands such as those in the Aegean Sea.

About 6 million years ago the African plate pushed far enough north to close off what is now the Strait of Gibraltar. This cut off most of the Mediterranean's water supply, which then largely dried up. Extensive layered deposits of various salts and other evaporites buried in the floor of the Mediterranean prove that this happened. Eventually the Atlantic broke through the Strait, refilling the Mediterranean basin. This cycle occurred perhaps 50 times until the last breakthrough 5.33 million years ago.⁶⁷ This period has been named the Messinian salinity crisis.⁶⁸ During some of the dry periods, the Nile River cut down to the floor of the Mediterranean Basin and created a canyon some 2,400 meters (8,000 feet) deep—quite a bit deeper than the Grand Canyon of Arizona—which has since filled with sediment.

When the Mediterranean was largely dry, most of today's islands were mountains. Animals of all sorts lived in the surrounding basins and wandered high up on the mountains. When the basins flooded again, the animals became isolated. Thus paleontologists have found that a variety of basically African and basically European faunas once lived on the islands of the Mediterranean, such as Sicily, Malta, Corsica, Sardinia, Crete, Cyprus, etc. Over time these animals evolved into subspecies such as dwarf forms. By the end of the last glacial period, most had become extinct.

A pertinent example of such animals is the hippopotamus. Today there exist just two species, the common hippopotamus (*Hippopotamus amphibius*) and the Liberian pygmy hippopotamus (*Choeropsis liberiensis*).⁶⁹ The fossil record contains many more species,⁷⁰ including varieties that lived mostly on land rather than in water.⁷¹ Many of these species, especially those whose fossils occur on islands, were dwarfs. In particular, in Sicily there existed *Hippopotamus pentlandi*⁷² (just a tenth the weight of today's common hippo; first named in 1832⁷³), which probably first arrived during the Messinian salinity crisis, although it could have swum across the Strait of Messina from mainland Italy any time after the Mediterranean refilled (the Strait is only 3 km across), or it might have walked across the dry bottom of the Strait during any glacial period after 2.6 million years ago⁷⁴ (the depth is as little as 72 meters⁷⁵), when ocean levels were as much as 130 meters below today's sea level. It seems to have become extinct sometime after 120,000 years ago. What few studies have been done indicate that it was a forest dweller, more like the Liberian pygmy hippo than the common hippo of most of Africa.⁷⁶

⁶⁶ https://en.wikipedia.org/wiki/Geology_of_the_Alps
https://en.wikipedia.org/wiki/Alpine_orogeny

⁶⁷ https://en.wikipedia.org/wiki/Messinian_salinity_crisis

⁶⁸ For a fascinating look at how scientists discovered the drying up of the Mediterranean, read Kenneth Hsu, *The Mediterranean Was A Desert: A Voyage of the Glomar Challenger*.

⁶⁹ <https://blogs.scientificamerican.com/tetrapod-zoology/a-quick-history-of-hippopotamuses/>

⁷⁰ https://ibdigital.uib.es/greenstone/collect/monografiesHistoriaNatural/index/assoc/Monograf/iesSHNB_/2005vol0/12p193.dir/MonografiesSHNB_2005vol012p193.pdf

⁷¹ <https://en.wikipedia.org/wiki/Hippopotamus>

⁷² https://en.wikipedia.org/wiki/Hippopotamus_pentlandi

⁷³ <http://www.edizionibelvedere.it/assets/petruso---taschetta-5-20.pdf>

⁷⁴ <https://core.ac.uk/download/pdf/49284638.pdf>

⁷⁵ https://en.wikipedia.org/wiki/Strait_of_Messina_Bridge

⁷⁶ <http://www.edizionibelvedere.it/assets/petruso---taschetta-5-20.pdf>

Making unfounded and unevidenced assumptions, as Daly and Prestwich did, is bound to result in wrong conclusions. For example, at an ancient rock shelter in Cyprus called Aetokremnos Cave⁷⁷ were discovered in 1980 large numbers of flint artifacts, shell beads, bones of extinct species of dwarf hippos and elephants, and remains of deer, pigs, fish, birds, and various molluscs. The bones of upwards of 500 hippos were excavated. Some of the bones were charred, suggesting that people roasted and ate the hippos, but this is probably wrong, since no bones had cut marks from butchering. It might be that the bones accumulated naturally, as they did in other caves on Cyprus, and then the peoples' fires disturbed and burned some. Radiocarbon dating of charcoal yielded occupation dates of around 12,000 years ago. People like Daly and Prestwich would likely leap to the conclusion "remains of Noah's Flood!" but cooler heads let the evidence speak for itself—definite conclusions about the reason for the accumulation are impossible at this time.

Given the above information on Joseph Prestwich, and noting that his writing was mostly speculation that has been disproved by modern geology and paleontology, let's see how Reginald Daly quotes him (p. 110). In the chapter "Rise and Fall of the Floodwaters—Geological Proof" Daly references several nutty or incompetent authors whose writings are as speculative and devoid of valid information as his own. He quotes Joseph Prestwich's speculative hyperbole:

"Crushing into the More Accessible Caves," and "swarming over the ground at the entrance," is Sir Joseph Prestwich's [*sic*] picture of the stampeding hippopotami, "that thronged together in vast multitudes, crushing into over-full caves." "Twenty tons of these bones were shipped from around the one cave of San Circo [*sic*]." "Large blocks from the sides of the hills were hurled down by the current of water, crushing and smashing the bones" (*On Certain Phenomena*, pp. 50-52).

With no justification whatsoever, Prestwich assumed that whatever had happened to the hippos had happened in a very short period of time and as a result of a massive, local flood of water. But as shown above, the hippos of Sicily were extinct by 120,000 years ago, the bones had accumulated by perfectly normal processes, and rock fragments had accumulated by perfectly normal weathering and erosion of the limestone bedrock that formed the cliff in which the San Circo cave was situated. So Daly's references to Prestwich were to little more than wild speculations. The same is true of *Awake!*'s references to Daly and to a "cavern near Palermo".

After his incompetent reference to Joseph Prestwich's book, which he certainly read, *Awake!*'s author again quotes Daly (already quoted above):

"What made rabbits run into the same cave as coyotes? And an antelope with a wolverine and a grizzly? Bones of the mastodon were found, also a few reptiles ... The whole mass of bones was covered and preserved by a flood deposit of gravel and rocks."

The only context given is to some unspecified "bone cave". The implication is that this "bone cave" is more or less the same as that "cavern near Palermo". Such confused writing is grossly dishonest because it misleads the reader and makes it difficult to judge the validity of the material.

Nevertheless, Daly's quotation is under the subtitle "The Mystery of the Cumberland Bone Cave". As usual Daly assumes that Noah's Flood was a real event and marshals evidence accordingly, completely ignoring what real scientists had long written. He writes:

A dozen different types of animals sought refuge in the famous Cumberland Bone Cave in Maryland. In an article entitled "Recent Paleontological Discoveries from Cumberland Bone Cave" Brother G. Nicholas writes,

⁷⁷ <https://en.wikipedia.org/wiki/Aetokremnos>

Steven Mithen, *After the Ice: A Global Human History 20,000-5000 BC*, 2003, pp. 97-98.

“In this one cave have been found such types as the wolverine, grizzly bear, and *Mustelidae*, which are native to Arctic regions. Peccaries, the most numerous type represented, tapirs and an antelope possibly related to the present-day eland are indigenous to tropical regions. Ground hogs, rabbits, coyotes, and hare remains are indicative of dry prairies, but on the other hand such water-loving animals as beaver and muskrat suggest a more humid region” (*Scientific Monthly*, May 1953). What made rabbits run into the same cave as coyotes? And an antelope with a wolverine and a grizzly? Bones of the mastodon were found, also a few reptiles, but most of the animals were mammals because reptiles are too lethargic and too lacking in intelligence to grasp the concept of a dry cave as a refuge from a deluge. The whole mass of bones was covered and preserved by a flood deposit of gravel and rocks.

Daly goes on to quote Immanuel Velikovsky to similar effect. As usual Daly does not *argue* his case for Noah’s Flood being the cause of what he describes, but merely *assumes* it. And he does so in the face of what his reference *Scientific Monthly* actually states. He claims that all of the Cumberland Bone Cave’s animals ran into the cave at one time, but that is not what *Scientific Monthly* states⁷⁸ (p. 301): “the accumulation of bones must have been *gradual*” because “the diversity of type indicates that widely varying climate zones must have existed during the time of deposition” (p. 301). Furthermore, “all the mammals are pre-Wisconsin in age”. The Wisconsin glaciation corresponds approximately with the Last Glacial Period,⁷⁹ which began about 115,000 years ago—long before young-earth creationist estimates for Noah’s Flood of some 4,400 years ago. Daly is grossly dishonest here and in other references as well.

The Cumberland Bone Cave is not even a normal cave: it was a pretty standard *sinkhole* in the limestone bedrock until 1912, when a railroad company building a track cut through the limestone and exposed the lower part of the sinkhole about 100 feet down, *which then became a cave* at the level of the new railroad track. Such fossil-containing sinkholes are not uncommon. For example, Natural Trap Cave in Wyoming⁸⁰ has been accumulating the remains of large animals for at least 100,000 years.

So, far from animals running into the Cumberland Bone Cave to escape rising floodwaters in a one-time event, they fell into the sinkhole over a period of tens of thousands of years, leaving their bones to be discovered when dynamite turned the sinkhole into a cave. Daly was either too incompetent, or flat out dishonest, to mention these facts, so he misrepresented the facts, which misrepresentation *Awake!* dumbly repeated. Daly’s “mystery of the Cumberland Bone Cave” is no mystery at all.

Awake! gullibly repeated Daly’s lying question, “What made rabbits run into the same cave as coyotes? ...” *Awake!* has no excuse for this, since Watch Tower writers quoted from *Scientific Monthly* several times from 1949 through 1968. *Awake!*’s author should have checked claims that were so far out of line with normal science.

Mammoths and Dinosaurs Lived Together?

The second of *Awake!*’s quotations from Reginald Daly shows that Daly was a young-earth creationist who believed that mammoths and dinosaurs lived together before Noah’s Flood (p. 7):

An extraordinary testimony to the widespread watery destruction of animal life is the remains of the mammoths found throughout northern Siberia and into Alaska. Hundreds of thousands (some estimate as many as 5,000,000) of these creatures were rapidly buried and quick-frozen in icy muck. They are sometimes found in a near-perfect state of preservation, with undigested tropical vegetation in their stomachs and between their teeth.

⁷⁸ https://alanfeuer.org/scientific_Monthly_May_1953_pp_301_305.pdf

⁷⁹ https://en.wikipedia.org/wiki/Last_Glacial_Period

⁸⁰ <http://westerndigs.org/wyoming-cave-yields-a-trove-of-ice-age-fossils-and-ancient-animal-dna/>

As to the type of catastrophe that could sweep away creatures over so widespread an area, *Earth's Most Challenging Mysteries* observes [*Awake!* does not give a page number, but it is from page 39]:

“There is one significant fact that is always connected with every dinosaur fossil and every mammoth fossil, and that is that every fossil is almost invariably dug out of water-laid sedimentary rock. Every fossil is either dug out of shale, which is just floodwater mud hardened into rock, or out of floodwater sand hardened into sandstone, or frozen into permafrost.”

Here Reginald Daly is relying on the redoubtable Henry Howorth again.

The claim that mammoths and dinosaurs once lived together was also part of Watch Tower teaching until the early 1980s. This was based on the notion that the creative days of Genesis were 7,000 years long, so that land animals were created just 13,000 years ago and must all have lived until Noah's Flood some 4,400 years ago. There is little difference between Daly's belief that animals were created just 6,000 years ago and the Watch Tower Society's teaching of 13,000 years—both are more than 10,000 times short of the mark.

This belief is found inside the front covers of certain Watch Tower publications: the 1958 book *From Paradise Lost to Paradise Regained* had a map of the Mediterranean region showing little drawings of a sauropod, a pterosaur, and a marine dinosaur. The 1961 revised *New World Translation* contained a similar map illustrating the sauropod. This illustration was retained until the 1981 revision of the *NWT*.

Like Daly, *Awake!*'s author has compressed the events of hundreds of thousands of years into just one year—the year of Noah's Flood. Yet he provides no justification for this whatsoever. Attempts at justification were given in earlier Watch Tower literature, following the ideas of various loony creationists and “flood geologists” like George McCready Price, Isaac Newton Vail, and Henry Morris,⁸¹ but as I've said, the Watch Tower Society gradually abandoned these ideas from the late 1950s to about 1980.

Awake!'s author also repeats the old Watch Tower chestnut about “frozen mammoths in the Arctic”. I've covered this in detail beginning on page 18 of this paper and won't repeat the details here. Suffice it to say that no animals were “quick-frozen”, none had tropical vegetation in their stomachs but had normal Arctic vegetation, none had undigested vegetation in their stomachs, and the circumstances of their deaths and burials are explained by the fact that their environment contained many “traps” of partly melted permafrost into which an unwary animal could step and be buried in icy mud. Some might also have bogged down in muddy river crossings that kept them in cold storage until they froze solid later.⁸²

Daly is also wrong that “every fossil is almost invariably dug out of water-laid sedimentary rock”. Many fossils have been found in terrestrial deposits such as sand dunes. For example, in 1971 there were found the entangled skeletons of a velociraptor and a protoceratops.⁸³ They had killed one another and immediately afterward were buried in sand, probably from a collapsed sand dune. There exist thousands of other fossils from non-marine sediments.

So much for *Awake!*'s references to Reginald Daly.

⁸¹ Many authors down through the years, who would be considered crackpots by modern scientists, borrowed from each other and produced a body of pseudoscientific literature from which Watch Tower authors freely borrowed. For example, the June 8, 1975 *Awake!* article we are considering here did this.

⁸² <https://www.livescience.com/46773-mammoth-calf-mummy-deaths.html> Note that the baby mammoths died from asphyxiation after inhaling mud. They were in excellent physical condition, proving that they did not die in a catastrophic flood.

⁸³ <https://www.amnh.org/exhibitions/fighting-dinos/the-fighting-dinosaurs>

Allan O. Kelly (1900-2000)⁸⁴ and Frank Datchille (ca. 1916-1983)⁸⁵

Here I extensively examine claims made in the authors' book *Target: Earth*, because these claims clearly illustrate how Watch Tower writers so often blindly and dumbly quote nonsensical sources—not because they actually prove the writers' point, but because they merely *seem* to, but only to readers as gullible and ignorant as they are.

From the jacket of their book *Target: Earth: The Role of Large Meteors In Earth Science* (1953) and other sources: Kelly attended one semester of college and became a California rancher, often traveling in the American west and Mexico. Self-educated in geology, he wrote at least four books and many papers on geological subjects. Datchille was a chemical engineer and geochemist, and was self-taught in geology. Most of their ideas were rejected by mainstream scientists. I would characterize them as borderline cranks in the area of geology because of their rejection of mainstream science, their demonstrable incompetence in interpreting geological features (see below), and their heavy reliance on full blown crackpots like George McCready Price. Unlike Price, they did not view Noah's Flood as a single, global event, but as the merging of many large, local flooding events into one legendary event.

Kelly and Datchille, especially in *Target Earth*, interpreted geology in terms of their view that most geological phenomena were the result of impacts of large asteroids or comets. They may even have been the earliest writers to peg the extinction of the dinosaurs to an asteroid/comet impact (p. 235), but this has little real significance since they also pegged the extinction of the large animals at the end of the last glacial period to catastrophic impacts accompanied by massive floods all over the world. They were “pole-shift” proponents, because they claimed that many of these impacts changed the orientation of the earth's axis such that the Arctic region moved as much as 2,000 kilometers to a new location.

As amateur geologists, Kelly and Datchille were unaware of or ignored the most current findings of real geologists. For example, in 1967 Kelly published the book *Continental Drift: Is It a Contemporary Impact Phenomenon?* even though by 1966 the science of plate tectonics (continental drift) was fully accepted by mainstream geologists.⁸⁶ An especially informative website describing plate tectonics generally, and especially as it applies to southern California, can be found at the link in this footnote.⁸⁷

In reading over Watch Tower publications from about 1965 through 1980, it is evident that Watch Tower writers borrowed many of their themes about evidence for Noah's Flood from *Target Earth*, as well as from the various crackpots listed in this paper. So, just as Kelly and Datchille relied on geological ideas that were pretty much obsolete by the mid-1960s, so did Watch Tower writers.

Let's look at where *Awake!* of June 8, 1975 quoted *Target Earth* twice (pp. 6-7) as evidence for Noah's Flood. These quotations show why it is dangerous to rely on amateurs such as Kelly and Datchille for accurate information. They also show how Watch Tower writers ignored mainstream science and relied on cranks and amateurs because these supported their presuppositions that the Society had taught in one form or another for a century. Note that, as usual, the writer failed to give page numbers for his quotations, but I was able to find them.

⁸⁴ https://www.carlsbadhistoricalsociety.com/Carlsbad%20Historical%20Society_files/AllanOKelly/oct5AOK.pdf

⁸⁵ <https://www.nytimes.com/1983/03/03/obituaries/frank-datchille-geochemist-and-teacher-dies-on-plane.html>

⁸⁶ William Glen, *The Road to Jaramillo: Critical Years of the Revolution in Earth Science*, jacket https://en.wikipedia.org/wiki/Plate_Tectonics_Revolution

⁸⁷ <https://olliuci.files.wordpress.com/2012/03/uci-talk-geology-of-socal-mountains-3-19-12.pdf>

Glacial Erratics

In line with “flood geology”, *Awake!* (p. 6) argues against the glacial origin of “glacial erratics”,⁸⁸ including and especially where geologists peg their origin to glacial transport, and attributes it to water transport in Noah’s Flood. This includes all regions now known to have been covered by continental glaciers during the 40-some-odd glacial periods of the past 2.6 million years, such as northern North America, northern Europe, and parts of northern Asia. The Society’s teaching was that the supposedly glacial geological features found in all such glaciated areas were created, not by glaciers, but by Noah’s Flood.

Is There Worldwide Evidence?

... Some have theorized that these huge masses of stone were carried to their present locations on top of glaciers during an ice age. “However, these boulders are also found in warmer climates far from any signs of glaciation. For example, in Southern California,” notes the book *Target: Earth*. [p. 108]

That seems strongly against the notion of “huge masses of stone” being deposited in various locations by glaciers, especially when “these boulders are also found in warmer climates far from any signs of glaciation” such as in Southern California. But *Awake!*’s argument rests on fallacious reasoning by Kelly and Dachille and on its own deliberate misrepresentation of what they wrote. Let’s look at the relevant paragraphs in *Target Earth* (p. 108):

Erratic boulders comprise one of the important items that are ignored by orthodox geologists except as they occur in glaciated regions. There is no doubt that ice did carry these boulders for many miles and did deposit them on entirely different formations. Such “erratics” are quite common in northern Europe and about the glaciated area of North America.

Unfortunately, Kelly and Dachille fail to admit that their statements are self-refuting in that, on the one hand, they admit that real glacial erratics exist in areas that even they agree were glaciated, but then go on to falsely equate random boulders found everywhere with actual glacial erratics. *Awake!* completely and dishonestly ignores the admission that real glacial erratics exist.

Target Earth uses a confused and wrong definition of “glacial erratic”, which it calls “erratic boulder”. The authors seem to have thought that any boulder at all, whether lying about on the land, or buried in a pile of sand, gravel and other boulders, is supposed by “orthodox geologists” to be an “erratic boulder” or a “glacial erratic”. They were wrong, because as footnote 88 shows, “a glacial erratic is glacially-deposited rock differing from the size and type of rock native to the area in which it rests.”

The book continues to confuse random boulders and glacial erratics (pp. 108-109):

However, these boulders are also found in warmer climates far from any signs of glaciation. For example, in Southern California there are many places where erratic boulders occur, but we have yet to read any geological report of their existence. In Riverside County, in the San Gorgonio Pass, there are many large granite boulders that have been carried a mile or more from their source and deposited on old tilted sedimentary rocks. Some of these boulders would weigh as much as fifty tons. Their source is a granite out-cropping about a mile and a half up the pass and about 150 ft. higher in elevation... San Diego County, California, has many erratic boulders (Fig. 57 & 58).

⁸⁸ https://en.wikipedia.org/wiki/Glacial_erratic

Here are Figures 57 and 58 from page 109.

Note how, in Figure 57, the authors have confused glacial erratics—which lie *on top of the ground*—with a pile of sand, gravel, and boulders that are obviously *part of a hillside*.

The authors fail to give an exact location for this hillside, so it is impossible to know where the photo was taken. Nevertheless, the pictures and information below show how badly Kelly and Dachtler have misrepresented the facts.

have rolled down this steep mountainside. San Diego County, California, has many erratic boulders (Fig. 57 & 58). Some of them granite, some sandstone, and some felsite. In most of these cases, the source is only a few miles away, but the boulders are found on hill tops and other places as high as or higher than their source and with deep intervening canyons between. If their source were not so apparent, it might be argued that icebergs brought them here from the Alaskan coast or some other distant place during the "Ice Ages".*



Figure 57 -- Boulder gravel west of Mt. Woodson, San Diego County, Calif.



Figure 58 -- Granite "erratic" boulder lying on sedimentary formation two miles from its source. Carlsbad, Calif.

Below is a picture of Mount Woodson, or Woodson Mountain, about five miles (8 km.) northwest of Poway, California. Note that there are boulders strewn all over its surface.



Concerning the origin of these boulders one source states:⁸⁹

This prominent peak with its distinctive boulder strewn appearance stands at 2894' and appears much different from surrounding peaks in the county. You may have wondered where did all these boulders came from? Well,

⁸⁹ https://www.geocaching.com/geocache/GCPRKW_woodson-mountain-spheroidal-weathering?guid=3781f3ea-8c46-4757-94fd-82735b481297

they were actually always there! These boulders formed in place by *spheroidal weathering*, which is a form of chemical weathering in which concentric shells of decayed rock (ranging from a few millimeters to a couple meters ...) are successively loosened and separated from a block of rock, transforming angular blocks into round boulders as you see today.

So the boulders, even the huge ones, were not transported at all, but formed in place by chemical weathering. Of course, over the millions of years of this weathering, many of them rolled downhill, just as do all manner of rocks that erode out of mountains comprised of rock.

Here are views near the summit of Woodson Mountain.⁹⁰ No doubt Kelly and Dachille would judge that the boulders are “erratics”.



Here is a really big “erratic boulder” on Woodson Mountain.



⁹⁰ <https://www.summitpost.org/woodson-mountain/282613>

Woodson Mountain is an outcrop of the Southern California Batholith,⁹¹ which is in turn part of the southern California Peninsular Ranges, which extend from north of Los Angeles down to the southern end of the Baja Peninsula. The batholith⁹² is comprised of a type of granite called granodiorite, of which Woodson Mountain is composed.

The material from *Target Earth* refers to Riverside County and Carlsbad in California. Riverside County is part of Greater Los Angeles and its bedrock is the same granodiorite that comprises Woodson Mountain, both part of the Southern California Batholith. Carlsbad is in San Diego County and its bedrock is again the same as that of Woodson Mountain. It seems obvious, then, that the “large granite boulders” and the “erratic boulders” the book refers to formed the same way as the boulders found on and near Woodson Mountain—they formed in place by chemical weathering and perhaps experienced transport downhill for short distances. Again because the book fails to give exact locations for its references it is not possible to be certain. Nevertheless, with the help of maps and Google Earth, it is possible to narrow down the location of granite boulders in San Gorgonio Pass.

Target Earth states:

In Riverside County, in the San Gorgonio Pass, there are many large granite boulders that have been carried a mile or more from their source and deposited on old tilted sedimentary rocks. Some of these boulders would weigh as much as fifty tons. Their source is a granite out-cropping about a mile and a half up the pass and about 150 ft. higher in elevation. The wall of San Jacinto Mountain rises abruptly to the south of these boulders but it is made of metamorphic rocks, including some strata of marble that stand nearly vertical, so the boulders could not have rolled down this steep mountainside.

San Gorgonio Pass⁹³ runs roughly between San Bernardino and Palm Springs. Interstate 10 and the Union Pacific Railway run through it. A branch of the San Andreas fault also runs through it, just north of Interstate 10. The summit of the pass is at 790 meters elevation. The peak of San Jacinto Mountain, or San Jacinto Peak,⁹⁴ is about 10 km south of Interstate 10. Its peak is at 3,300 meters, and rises about 2,400 meters above the pass. The north and northeast slopes are extremely steep, rising as much as 1,000 meters in 2 km.

Contrary to what *Target: Earth* claims, the mountain is mostly comprised of igneous granite,⁹⁵ with some metamorphic marble interbedded with the granite, all exposed on the north slope.⁹⁶ Experienced hikers and rock climbers often tackle the slope. A couple of hikers posted on their website a photographic record of their ascent.⁹⁷ It shows a clear view of the north face and documents many granite boulders along the way.

Given these facts, it is evident that *Target Earth*'s description is entirely inadequate. Exactly where are the “large granite boulders” located? Exactly where is the “granite out-cropping” that is their supposed source? Exactly where is “a mile and a half up the pass” measured from? And in which direction? Since the “wall of San Jacinto Mountain” is mostly granite with some marble interbedded, the authors' statement that “it is made of metamorphic rocks, including some strata of marble that stand nearly vertical” is mostly false: granite is not a metamorphic rock, although marble is. So their final statement is false for several reasons: since the boulders in question are granite, and granite is exposed

⁹¹ https://www.sandag.org/uploads/publicationid/publicationid_1558_12641.pdf

⁹² <https://en.wikipedia.org/wiki/Batholith>

⁹³ https://en.wikipedia.org/wiki/San_Gorgonio_Pass

⁹⁴ https://en.wikipedia.org/wiki/San_Jacinto_Peak

⁹⁵ <https://www.usatoday.com/story/travel/destinations/2013/06/27/san-jacinto-peak-mountains-geology/2464773/>

⁹⁶ https://www.nps.gov/parkhistory/online_books/geology/publications/bul/845/sec28.htm

⁹⁷ <http://verticalnomads.com/mt-san-jacinto-via-snow-creek/>

everywhere on the north slope, and granite boulders can form by several processes including chemical weathering and the usual cracking by freeze-thaw cycles, such boulders could certainly be transported downhill by various normal processes over several million years. The following photos of the mountain's north slope show this clearly.

Here is a view of San Jacinto Mountain from an intermediate distance, looking south.



Here is a closer view of the same area. Note the granite boulders strewn everywhere. They occur on the mountainside in the foreground, and on the valley floor below.



Here is a Google Earth view of the area looking south. San Jacinto Mountain is top center.



A zoomed-in view of the above:



The above zoomed even closer:



Note the boulder-strewn hill. This shows that granite boulders that eroded out of the base granite of the hill do indeed roll downhill in this area. And the above photos show such boulders lying on top of the sediments of the alluvial fan shown in the pictures.

The above text and pictures show that the paragraph from *Target Earth* quoted back on page 38 is incoherent, non-factual, and just plain nonsense.

The above also proves that Watch Tower writers have neither the knowledge nor the desire to evaluate scientific material—especially pseudo-scientific material from amateurs and loons that is not in line with their doctrinal prejudices and traditions.

More Frozen Mammoths

In the second of its quotations from *Target: Earth*, the June 8, 1975 *Awake!* continues using *Earth's Most Challenging Mysteries* to preface its arguments. This was quoted and refuted beginning on page 27 above. *Awake!* says:

An extraordinary testimony to the widespread watery destruction of animal life is the remains of the mammoths found throughout northern Siberia and into Alaska. Hundreds of thousands (some estimate as many as 5,000,000) of these creatures were rapidly buried and quick-frozen in icy muck. They are sometimes found in a near-perfect state of preservation, with undigested tropical vegetation in their stomachs and between their teeth. As to the type of catastrophe that could sweep away creatures over so widespread an area, *Earth's Most Challenging Mysteries* observes:

“There is one significant fact that is always connected with every dinosaur fossil and every mammoth fossil, and that is that every fossil is almost invariably dug out of water-laid sedimentary rock. Every fossil is either dug out of shale, which is just floodwater mud hardened into rock, or out of floodwater sand hardened into sandstone, or frozen into permafrost.”

As usual, *Awake!* fails to give a page number, but I give it here:

Target: Earth notes with regard to the Yukon district of North America: “The presence of bones, trees, peat, and other debris all mixed together down to a depth of nearly 100 feet, points to a cataclysmic flood of tremendous proportions that must have moved across the land, grinding the bodies of the animals with stones and trees and spreading the whole out over the Yukon Valley.” [p. 229]

I refuted these claims beginning on page 18 above. “Bones, trees, peat, and other debris” were not “all mixed together down to a depth of nearly 100 feet”. Rather, this “muck” mostly occurs in distinct, unmixed layers. As shown above, the “muck” consists of layers of wind-blown loess interbedded with the remains of forests and such. In Alaska these have been dated to various times beginning before and up to about 140,000 years ago. Wherever these stratified deposits have been disturbed by later flooding, thermokarst formation, melting, solifluction, etc., only then can they be described as “jumbled” or “all mixed together”. This evidence proves that there was no single great flood or other catastrophe, but that the geological features accumulated over a long period of time during several glacial periods that were punctuated by interglacial periods like the interglacial in which we are living today.

Beginning on page 224, *Target: Earth* begins arguing that “quick-frozen mammoths” and such exist. On the next two pages it references the crank George McCready Price in support. On page 226 it references one “Dr. Frank C. Hibernia”⁹⁸ (1910-2002) as having written the article “Our Search for the Earliest Americans” in an unspecified “popular magazine” (this turns out to be *Harper's Magazine*, July 1944). *Target: Earth* says nothing about mammoths and such with respect to this article. Hibernia was an archaeologist specializing in Paleo-Indians in the American Southwest. He had no formal training in geology. Some of his claims were controversial, with some authors claiming fraud.

Target: Earth then states that Hibernia published a book in 1946 called *The Lost Americans*, which

discussed the great quantities of animal remains found frozen in central Alaska. His description of how these animals are found in the frozen ground of Alaska and his speculations as to how so many animals met their death at one time are unique.

Dr. Hibben tells of the tremendous quantities of bones found all over North America and especially in Alaska... [Hibben writes:] “[Within the frozen muck] lie the twisted parts of animals and trees intermingled with lenses of

⁹⁸ https://en.wikipedia.org/wiki/Frank_C._Hibben

ice and layers of peat and mosses. It looks as though in the middle of some cataclysmic catastrophe of ten thousand years ago the whole Alaskan world of living animals and plants was suddenly frozen in mid-motion in a grim charade.” (Page 91).

Target: Earth quotes further from Hibben and concludes (pp. 227-229):

What a picture of sudden death and destruction!

Target: Earth then argues for its main thesis, that a massive flood caused by an asteroid impact created the features that Hibben described:

In the above description, Hibben gives us a picture of catastrophic destruction that cannot by any stretch of the imagination be attributed to ordinary floods. The presence of bones, trees, peat, and other debris all mixed together down to a depth of nearly 100 feet, points to a cataclysmic flood of tremendous proportions that must have moved across the land, grinding the bodies of the animals with stones and trees and spreading the whole out over the Yukon Valley. No ordinary floods as we know them have accomplished this great depth of debris at one time, nor is it at all likely that so many kinds and numbers of animals could have been captured by ordinary flood waters, even in a temperate climate... The animals we are discussing met their death in the collision-flood waters of the neighboring icy oceans. They were torn limb from limb and mixed with the muck and debris of the flood. In the same time the area was moved 2000 miles closer to the newly forming polar cap which contains the present North Pole. Within a few hours or days they were frozen solid and have remained in that condition to this day.

As shown above, the conclusions reached by Hibben and *Target: Earth* about massive, sudden catastrophe based on the disposition of frozen muck are completely wrong.

The June 8, 1975 *Awake!* based its similar conclusions on the above-quoted paragraph. Those conclusions are therefore wrong.

It turns out that Frank Hibben, in his 1946 book *The Lost Americans*, exaggerated his observations in the Yukon Valley to the point of dishonesty, apparently to boost sales for popular consumption. And of course, the authors of *Target: Earth*, looking for support from any quarter, did the same. It is obvious that the author of *Awake!* similarly grasped at scholarly straws.

The fact that Hibben knew better is proved by the following information.

In the summer of 1941, Hibben and some colleagues from the University of New Mexico traveled to the vicinity of Fairbanks, Alaska, to look for arrowheads and other evidence for the existence of “Folsom Man”.⁹⁹ Later in 1941 he published an article about their findings in a scientific journal,¹⁰⁰ where he engaged in none of the theatrics evident in the 1944 *Harper’s* article and in his 1946 book *The Lost Americans*. Indeed, with respect to the muck around Fairbanks, he wrote (p. 153):

It is remarkable to note that all plant species excepting two from the mucks are found in the region today among existing forms. The only common species which has not been identified in the living flora of Alaska is an indeterminate *Silene* [¹⁰¹]. It has been widely believed that the late Pleistocene and Early Recent climate of Alaska was more moderate than at present and that this fact had much to do with the entrance of Early Man into the Behring Strait region. This floral assemblage might be referred entirely to the Recent period were it not for the association of such undoubted Pleistocene forms as *Felix atrox alaskensis*, *Mammonteus primogenius*, and

⁹⁹ https://en.wikipedia.org/wiki/Folsom_Site
<http://www.folsomvillage.com/FolsomManSite.html>

¹⁰⁰ Hibben, Frank. “Archaeological Aspects of the Alaska Much [sic.; should be Muck] Deposits.” *New Mexico Anthropologist* 5, 4 (1941): 151-157.

https://alanfeuer.org/hibben_1941_Archaeological_Aspects_Muck.pdf

¹⁰¹ <https://en.wikipedia.org/wiki/Silene>

Bison crassicornis. Sukachoff reports *Betula*, *Carex*, and *Ranunculus* [buttercup] in the stomach contents of a frozen mammoth from the Berezovka River all of which genera are noted in the Alaska mucks. There is no floral nor, indeed, faunal evidence to indicate that the Alaskan climate of the Yukon region differed measurably in the Pleistocene from that of today. With this climatic evidence the deposition of the Alaska mucks may be presumed to have occurred under conditions similar to those of today.

Hibben commented on the layering of the muck deposits (pp. 153-154):

In contrast to certain of the Siberian occurrences, the Alaska mucks contain faunal remains that are almost invariably disarticulated in spite of the fact that not uncommonly ligaments, cartilage, and portions of flesh and skin yet adhere to the bones. Cross sections of the muck in those places where these can be observed by the cutting action of the hydraulic giants show an abundance of vegetal material, much of which is in the form of large trees. Some of the latter are in an upright position with stumps in place, apparently growing on their original ground level. By far the majority of the tree and larger wood remains lie in twisted piles in accumulations suggesting their deposition in ephemeral arroyo or small canyon cuts. The torn and lacerated limbs and trunks of these trees give every indication of violent but not lengthy transportation to their present situation. Intermittently, however, with these violent erosional evidences, are lenses of peat apparently representing a static ground level at that particular stratum for at least several years. The total of these evidences indicates the alternate and intermittent periods of violent erosion such as would dismember animal remains and splinter trees, interspersed with other periods of comparative quiescence so as to allow the growth of “forests” and peat bogs in the same area.

A possible clue to this erratic climatic sequence is to be found in the occurrence of definite layers of volcanic ash in the muck deposits themselves and in the other portions of the same region.

Layers of volcanic ash, now known to have come from the Aleutian Islands, prove that this muck was not deposited in a single violent flood, but intermittently. So does the existence of tree stumps in an upright position, “apparently growing on their original ground level”, as do the “lenses of peat apparently representing a static ground level”.

Clearly then, Frank Hibben’s earliest description of his Alaskan observations lends no support to *Target: Earth’s* claims.

Hibben published another article in 1943¹⁰² that said more or less the same thing (pp. 255-256):

The deposits known as muck may be definitely described, in the opinion of the writer, as loess material. All characteristics seem to indicate a wind-borne origin from comparatively local sources, as the material resembles the underlying bedrock. The outwash plains of the local glaciations are likely points of origin for this material. These muck deposits are from four to one hundred feet thick and are especially well known in the vicinity of Fairbanks, Circle, and the other gold mining centers of the upper Yukon and the Tanana where the muck overlies auriferous gravels. Muck deposits of considerable thickness, however, are found in the lower reaches of the Yukon, on the Koyukuk River, on the Kuskokwim, and on several places along the Arctic Coast, and so may be considered to extend in greater or lesser thickness, over all unglaciated areas of the northern peninsula. The deposits are concentrated in creek or river valleys for the most part, and have been exposed in gold mining operations. In addition to amorphous bodies of loess material, the muck contains interbedded volcanic ash layers, lenses of clear ice and peat, and abundant animal and vegetal material, the whole frozen into a solid mass.

Hibben next gives his opinion that local “catastrophic conditions” deposited *portions* of the muck—not the whole frozen mass of it (p. 256):

Although the formation of the deposits of muck is not clear, there is ample evidence that at least portions of this material were deposited under catastrophic conditions. Mammal remains are for the most part dismembered and

¹⁰² Frank C. Hibben, “Evidences of Early Man in Alaska”, *American Antiquity*, January, 1943, Vol. 8, No. 3, pp. 254-259. https://alanfeuer.org/hibben_1943_Early_Man_Alaska.pdf

disarticulated, even though some fragments yet retain, in this frozen state, portions of ligaments, skin, hair, and flesh. Twisted and torn trees are piled in splintered masses concentrated in what must be regarded as ephemeral canyons or arroyo cuts. However, areas in which peat layers occur indicate a stabilization of certain portions of the muck for at least a period of several years and forests of trees found in certain areas give evidence of even more lengthy periods of stabilization. It thus appears that the formation of the Alaskan mucks is complex and that all of these depositions were certainly not made at a single time. This evidence is even more convincing when it is noted that at least four considerable layers of volcanic ash may be traced in these deposits, although they are extremely warped and distorted by solifluction.

In the 1944 *Harper's Magazine* article,¹⁰³ Hibben gave a description of the Alaskan muck consistent with his earlier articles:

This muck is a black silt, eternally frozen from three feet below the surface down to an unknown depth. Its origin is a little mysterious, but apparently it is made up largely of wind-blown dust—dust and dirt swept up in gales and winds many thousands of years ago when the Yukon Valley was surrounded by glaciers. Mixed in the muck at all levels, and in practically all places, are the remains of animals, and also of vegetation—all frozen solid. As the miners in their pits thawed their way down through the muck with steam jets and boiling water to get at the gold beneath, they encountered bones and trees, masses of leaves, peat, and all other evidences that there had once been in these places a populous animal life; as well as the bushes, grass, and other vegetation which sustained it. The remarkable thing was that many of these animal bones still had flesh on them, or tendons, or scraps of skin. Here in one place we would find the foreleg of a mammoth; in another place a portion of a mammoth trunk jutted out of a frozen wall. There, melting out of the side of a miner's cavity, was a small patch of lion skin, with yellow hair on it. It has been a long time since there were any lions in Alaska.

Again Hibben says nothing about a great, watery cataclysm that produced the Alaskan muck all in one go. Unfortunately, he fails to note that much of the muck occurs in stratified layers, but gives the impression that it was all jumbled up in one great mass. Apparently Hibben was beginning to play to a popular audience by making the muck seem more unusual than it actually is.

In his 1946 book *The Lost Americans*, Hibben lost the sober, scientific viewpoint evident in his science journal articles and indulged in the exaggeration and hyperbole that characterize so much material written for popular audiences. So-called “pole-shift catastrophists” have freely used these exaggerations and falsehoods to argue in favor of their views. An online discussion forum piece states:¹⁰⁴

If a person looks at the numerous scientific publications that have been published in the scientific literature in the 62 years since “Lost Americans” was published, a person finds that descriptions made by Hibben (1946, 1951) of the Alaskan muck have ****not**** been collaborated by any later researcher, i.e. Bettis et al. (2003), Busacca et al. (2004), Muhs and Bettis (2003), Muhs et al. (2003), Pewe (1955, 1975a, 1975b, 1989), Westgate et al. (1990, 2003), and many others. They have all found that the “huge numbers of late Pleistocene animal carcasses and splintered trees” reported in Hibben (1946) and their mangled condition are grossly overexaggerated by him and the various books and web pages that cite Hibben (1943, 1946).

Consistent with my above discussion, the forum piece further states:

In the real world, the so-called “Alaskan muck” is a well-ordered, layer-cake sequence of layers of loess, colluvium, and solifluction deposits separated by paleosols, erosional unconformities, and buried forests with in situ stumps. These layers are illustrated by figures 20 and 29 of Pewe (1975b), figure 4 of Pewe et al. (1997), and the measured sections of Westgate et al. (1990). Within what Hibben (1943, 1946) refers to as the “Alaskan muck”, geologists readily recognized 7 well-defined, distinct layers. The major layers are the Ready Bullion

¹⁰³ Frank C. Hibben, “Our Search for the Earliest Americans”, *Harper's Magazine*, July, 1944, pp. 139-147.

<https://alanfeuer.org/HarpersMagazine-1944-07-0020725.pdf>

¹⁰⁴ https://groups.google.com/g/alt.archaeology/c/x99x_7bPVyE?pli=1
https://alanfeuer.org/Mythology_Hibben_Alaskan_Muck.html

Formation, Engineer Loess, Goldstream Formation, Gold Hill Loess, and the Fairbanks Loess. They consist of silt, which have been demonstrated to consist of a combination of wind-blown silt called “loess” and sediments moved down-hill by slopewash and solifluction. Lying between these major units are Dawson Cut and Eva Formations, which consist of buried forests that are rooted in “fossil” soils, which are called “paleosols”. Lying buried beneath the loess and filling buried valleys are gold-bearing stream gravels, which have been divided into the Tanana Formation, Fox Gravel, and Cripple Gravel. These layers are jumbled only where they have been disturbed by either thermokarst, landslides, solifluction, gold mining, or some combination of these processes (Bettis et al. 2003; Busacca et al. 2004; Muhs and Bettis 2003; Muhs et al. 2003; Pewe 1955, 1975a, 1975b, 1989; Westgate et al. 1990, 2003). As summarized by Bettis et al. (2003), Busacca et al. (2004), and Muhs and Bettis (2003), the Alaskan muck consists of layers of loess, colluvium, and solifluction deposits that have periodically accumulated over the last 3.5 million years. These layers are separated by paleosols and unconformities that formed during long periods when sediments did not accumulate. Locally, the uppermost part of the so-called “Alaskan muck” of Hibben (1943, 1946) is Holocene in age and still accumulating (Muhs and Bettis 2003).

The forum piece gives a view of why Hibben falsified information:

In much the same way that Hibben (1946) paints a completely false picture of the bones of mammoth and other megafauna being found in boxcar-load quantities, it also gets carried away with a gross overexaggeration of the facts while engaged in speculative and fallacious arm waving about the terminal Pleistocene extinction within Nebraska. As noted by Eislely (1947), while writing about great bone deposits of terminal Pleistocene age and allegedly found in Nebraska, Hibben (1946) incorrectly states:

“... here we find literally thousands of these remains together... whole herds overcome by some common power.”

However, pages before that, Hibben (1946) completely contradicts itself when it states:

“In the Plains area ... where fossil bones have been found, they usually turn up in small quantities and in fragile condition.”

In this review, Eislely (1947) concludes that Hibben (1946) “in his popular writing has a penchant for the sweeping statement and in the realm of the spectacular which occasionally gets a little out of hand.” and “... ignores scientific caution for the sake of his story.”

The forum piece shows that Hibben contradicts himself between his 1943 paper and his 1946 book:

Even Hibben (1943) clearly contradicts Hibben (1946). For example, Hibben (1943) states:

“The deposits known as muck may be definitely described, in the opinion of the writer, as loess material. All characteristics seem to indicate a wind-borne origin from comparatively local sources, as the material resembles local bedrock. The outwash plains of the local glaciations are likely points of origin for this material. These muck deposits are from four to one hundred feet thick and are especially well known in the vicinity of Fairbanks, Circle, and other gold mining centers of the Upper Yukon and the Tanana where the muck overlies auriferous gravels.”

Contrary to what is stated in Hibben (1946), Hibben (1943) clearly concluded that the vast majority of his “muck” deposits consist of wind-blown loess and related colluvial and solifluction deposits.

Hibben (1943) also noted:

“Twisted and torn trees are piled in splintered masses concentrated in what must be regarded as ephemeral canyons or arroyo cuts.”

and

“However, areas in which peat layers occur indicate a stabilization of certain portions of the muck for at least a period of several years and forests of trees found in certain areas give evidence of even more lengthy

periods of stabilization. It thus appears that the formation of the Alaskan mucks is complex and that all of these depositions were certainly not made at a single time.”

Again Hibben (1943) vastly contradicts Hibben (1946) by stating his piled and splintered masses of vegetation and animals comprise only a very very minor part of his “Alaskan muck” and that his “Alaskan muck” consists of sediments that accumulated episodically over a long period of time. It is also interesting that he writes about “ephemeral canyons or arroyo cuts”, as it indicates that he is interpreting polar periglacial permafrost deposits in terms of processes that characterize hot arid desert environments that are totally devoid of permafrost. It is now known that his “splintered masses of vegetation” fill depressions and ravines created by the periodic melting of permafrost, called “thermokarst”, during interglacial epochs or interstadial periods.

The forum piece references a real geologist on the matter:

Having seen the splintered masses of vegetation that are described by Hibben (1946) as the result of a global catastrophe, Canadian geologist, Dr. Andrew MacRae, who unlike Dr. Hibben, has expertise in how the formation and melting of permafrost can deform sediments, stated about the “Alaskan muck” in MacRae (1996):

“Wow. Debris flows. Slumps initiated by permafrost melt. Crevasse fills in permafrost. The question is not whether or not this is evidence of a “catastrophe”, it is why on Earth authors who cite this material interpret non-stratified, poorly-stratified, “jumbled” deposits with disarticulated skeletons as evidence of a global catastrophe? It is a stretch, to say the least. It is far from the only mechanism which could produce a deposit with these features. There are many modern processes, which can produce equivalent deposits “jumbled together in no discernable order”, and many of these processes occur in Alaska and other arctic areas today (including Siberia). How do you propose eliminating these other processes as a possibility in order that a “catastrophe” of regional or global scope becomes the only viable hypothesis? Many authors which cite this material as evidence do not even bother mentioning the alternatives.”

In the same vein, the forum piece states:

As the above dates demonstrate, none of the major region volcanic beds, which are found in the “Alaskan muck” of Hibben (1943, 1946) date to the end of the Pleistocene. Except for the Old Crow Tephra, they all are tens of thousands, hundreds of thousands, and millions of years older than Hibben (1943, 1946) guessed them to be.

The wide spread of ages for these ash beds (tephras) has significant implications. First, they are neither the result of a terminal Pleistocene catastrophe as suggested by Hibben (1943, 1946), Hapgood (1970), and others nor the same catastrophe. As independently collaborated by both the magnetostratigraphy and thermoluminescence dating of the loess, they demonstrate that the “Alaskan muck” accumulated periodically over millions of years and completely refute the interpretations of Hibben (1943, 1946), Hapgood (1970) and other that it accumulated as the result a single terminal Pleistocene catastrophe.

There is also a wide variation in the radiocarbon dates obtained from the mummified mammal remains recovered from what Hibben called the Alaskan Loess as seen in Table 13 of Pewe (1975a). For example, radiocarbon dates of mummified mammoth remains were dated at $21,300 \pm 1300$ and $32,700 \pm 980$; a mummified horse at $26,760 \pm 300$, mummified bison at $11,735 \pm 130$, $12,460 \pm 320$, $35,000$, 5340 ± 110 , $29,295 \pm 2,440$, $39,000$, $21,065 \pm 1,365$, $18,000 \pm 200$, $28,000$, $31,400 \pm 2,040$, $17,170 \pm 840$, $20,445 \pm 885$, $31,980 \pm 4,490$, $16,400 \pm 2,000$, and $11,980 \pm 135$. The wide spread of radiocarbon dates for mummified mammal remains demonstrate that they neither died as the result of a single catastrophic event nor had they died and were buried by a single terminal Pleistocene catastrophe.

The forum piece concludes:

The numerous scientific publications that have been published in the past 62 years since “Lost Americans” was published clearly discredit the interpretations made by Hibben (1946) about the manner and age origin of the “Alaskan muck”. It would be scientific malpractice in the future, as past authors of books and web pages have done in the past, to mistake any of it for having any scientific validity at all. Even Hibben (1943) contradicts and discredits some of what was written in Hibben (1946).

Since Hibben, in his popular book *The Lost Americans*, contradicts what he says in his earlier science journal papers, and is contradicted by various qualified scientists, as shown above, his book can be dismissed as a valid reference for the physical condition of Alaskan muck. Thus, virtually everything that *Target: Earth* said in regard to this muck can be dismissed. In particular, its conclusion that an asteroid collision created a gigantic flood in Alaska and shifted the earth on its axis is just so much poppycock.

Similarly, because the June 8, 1975 *Awake!* article relies on *Target: Earth*, and hence on Frank Hibben's *The Lost Americans*, it too, can be dismissed as nonsense.

Target: Earth was also referenced in *The Watchtower*, May 15, 1958, p. 303; *Awake!*, June 8, 1975, p. 7.

Byron C. Nelson (1893-1970)¹⁰⁵

Nelson was a creationist and “flood geologist” in the spirit of George McCready Price. His book *The Deluge Story in Stone* (1931) closely followed George McCready Price's writings, and the two men had a close association. Nelson was a major player in Fundamentalist Christian apologetics related to the Flood up through the 1960s. He taught that all fossils and the frozen animals in the Arctic were the result of Noah's Flood.

Nelson was referenced in *The Watchtower*, July 15, 1968, p. 421; *Awake!*, September 22, 1970, p. 10; *Good News—To Make You Happy*, 1976, p. 83.

Alfred M. Rehwinkel (1887-1979)¹⁰⁶

Rehwinkel was a “flood geologist” in the spirit of George McCready Price. His book *The Flood in the Light of the Bible, Geology, and Archaeology* (1951, 1957) was a popularization of several of Price's books, especially *The New Geology*. It was widely read in Fundamentalist Christian circles until Morris and Whitcomb published *The Genesis Flood* in 1961. Rehwinkel taught that all fossils and the frozen animals in the Arctic were the result of Noah's Flood.

Rehwinkel was referenced in *Awake!*, June 8, 1975, pp. 6-7, along with Daly's *Earth's Most Challenging Mysteries*, and Kelly's and Dachille's *Target: Earth*. Also in *Insight*, Vol. 1, p. 165.

Charles Hapgood (1904-1982)¹⁰⁷

Hapgood was the most prominent mid-20th-century advocate of the “cataclysmic pole shift hypothesis”, which says “that there have been geologically rapid shifts in the relative positions of the modern-day geographic locations of the poles and the axis of rotation of the Earth, creating calamities such as floods and tectonic events.”¹⁰⁸ Hapgood is generally considered a pseudoscientist. His ideas are set forth in his books *Earth's Shifting Crust: A Key to Some Basic Problems of Earth Science* (1958) and *The Path of the Pole* (1968), and are quite a bit more sober than those of many other pseudoscientists, and especially those of the nutters listed above. Nevertheless, Hapgood's main ideas have been disproved by scientific discoveries after 1958, such as plate tectonics and ice age theory.

¹⁰⁵ https://digitalcommons.cedarville.edu/cgi/viewcontent.cgi?article=1149&context=icc_proceedings

¹⁰⁶ <https://www.lutheranscience.org/home/180015283/180015283/180153808/Journal%202010%20Rehwinkel%20Flood%20Krug.pdf>

¹⁰⁷ https://en.wikipedia.org/wiki/Charles_Hapgood

¹⁰⁸ https://en.wikipedia.org/wiki/Cataclysmic_pole_shift_hypothesis

Hapgood accepted most of the pseudoscientific claims about “frozen animals in the Arctic” as discussed above. He has been cited as an authority by many pseudoscientists and cranks such as Graham Hancock. Toward the end of his life, Hapgood dabbled heavily in spiritism.

Francis Hitching (1933-)¹⁰⁹

Paranormalist, dowser. Hitching is into UFOs, cosmic cataclysms, miraculous healing, Atlantis, ESP, pyramidology, and astrology. He was a British tabloid TV writer for such shows as Leonard Nimoy’s *In Search Of*, and was author of the pseudoscientific book *The Neck of the Giraffe* (1982). Hitching has no scientific credentials and believes evolution is directed by some unspecified cosmic force. The reference work *Contemporary Authors*, Vol. 103, page 208, lists him as a member of the Society for Psychical Research, the British Society of Dowsers and the American Society of Dowsers. Other writings include: *Earth Magic; Dowsing: The Psi Connection; Mysterious World: An Atlas of the Unexplained; Fraud, Mischief, and the Supernatural; and Instead of Darwin*. He claimed to be a member of the Royal Archaeological Institute, but an inquiry of that institute showed he was not. He implied in the “Acknowledgments” of *The Neck of the Giraffe* that paleontologist Stephen Jay Gould had helped in the writing of the book, but a private inquiry to Gould revealed that Gould did not know him and had no information about him. He implied that zoologist Richard Dawkins of the University of Oxford had a hand in writing the book, but upon inquiry Dawkins stated: “I know nothing at all about Francis Hitching. If you are uncovering the fact that he is a charlatan, good for you. His book, *The Neck of the Giraffe*, is one of the silliest and most ignorant I have read for years.” The 1985 *Creation* book quotes Hitching directly at least thirteen times, and a few other times without attribution. *The Neck of the Giraffe* spends much of its time attacking Darwinian evolution, uncritically and heavily borrowing young-earth creationist arguments. Several of Hitching’s “references” are plagiarized from six-literal-day creationist literature rather than being quoted directly from their original sources. This is apparent because Hitching made exactly the same errors as did the creationists from whom he got his material (see an example below). *Creation/Evolution Newsletter* (7, No. 5, pp. 15-16, September/October 1987) said this about Hitching:

Speaking of the Biblical Creation Society, there was an interesting letter in the January 1983 issue of their journal *Biblical Creation* (p. 74) concerning a review of Francis Hitching’s 1982 book *The Neck of the Giraffe*. Hitching’s book is strongly anti-Darwinist, and is enthusiastically hailed by most creationists (though he also pokes fun at fundamentalist creationists). The letter, by creationist Malcolm Bowden (author of *The Rise of the Evolution Fraud*), points out that Hitching simply “culled his information from the creationist literature.” This is indeed the case: many creationist works are cited favorably (Anderson, Coffin, Clark, Daly, Davidheiser, Dewar, Gish, Morris, Segraves, Whitcomb, and Wysong, plus various anti-Darwinists). Hitching does cite Bowden’s earlier book *Ape-Men—Fact or Fallacy?*, but Bowden accuses Hitching of “lifting” several passages and illustrations from his book without acknowledgment: in other words, plagiarism. “Hitchin’s [sic] book is largely an exposition of the creationists [sic] viewpoint from the beginning to almost the end,” Bowden points out... Hitching is also a paranormalist, an advocate of psychic evolution... [Hitching’s book] *Earth Magic* is a wild, extremely entertaining and thoroughly psychic interpretation of megalithic structures... Hitching also includes in his scheme cosmic cataclysms, Atlantis, pyramidology, dowsing, ESP, miraculous healing, and astrology.

When the Watch Tower Society quotes Francis Hitching, let the reader beware.

¹⁰⁹ https://en.wikipedia.org/wiki/Francis_Hitching
https://rationalwiki.org/wiki/Francis_Hitching

Summary of Pseudoscientific and Incompetent Authors in Watch Tower Literature

Watch Tower writers have borrowed many of their ideas and much of their material from the above cranks. For example, a 1957 *Awake!*¹¹⁰ referred directly or indirectly to four of them on one page: Isaac Newton Vail, George McCready Price, Byron C. Nelson, and Henry Howorth. The writer was advocating the usual “vapor canopy” idea, i.e., that before Noah’s Flood the earth had a uniform tropical climate and when a form of Vail’s vapor canopy fell and created the Flood, freezing winds quick-froze the entire Arctic. Paranormalist Francis Hitching’s book *The Neck of the Giraffe* was cited at least thirteen times in the 1985 book *Life—How Did It Get Here? By Evolution or by Creation?*. Other references in Watch Tower literature have been given above.

Interestingly, the above 1957 *Awake!* quotes the original 1953 *New World Translation*, and comments:

“... on this day all the fountains of the great **water canopy** were broken open and the floodgates of the heavens were opened. And the downpour upon the earth went on for forty days and forty nights.”—Genesis 7:11, 12, *New World Trans.*

It was because of this canopy that the earth before the Flood had a uniform climate. Tropical vegetation covered the polar regions and tropical animals lived there. And with the complete removal of this canopy our present seasons began.

The 1961 revised version of the *New World Translation* has “watery deep” rather than “water canopy”. Why? Apparently because someone realized that the Hebrew word *tehoim* has no connotation of “canopy” anywhere in the Hebrew scriptures. It is translated as “surging waters” in Genesis 1:2 in the 1953 *NWT*. This version has a footnote for Genesis 7:11:

“Great water canopy.” Or, “many surging waters,” to agree with the Hebrew word at Genesis 1:2.

Compare this with Genesis 1:2 in the 1953 *NWT*:

Now the earth proved to be formless and waste and there was darkness upon the surface of the surging waters.

According to various Hebrew lexicons, *tehoim* means “deep, sea, abyss, primeval ocean, the water around the earth after creation”.¹¹¹ Again we find no connotation of “water canopy”. Furthermore, the idea of “many surging waters” makes no sense as a description of a *vapor* canopy. Exactly what within such a gaseous canopy could *surge*?

Obviously, in the 1953 version the *NWT* translator Fred Franz read into the passage what he wanted it to say in terms of Watch Tower tradition, namely, that there was a “water canopy” above the earth. Apparently he later realized that this was not an accurate translation and perhaps even that the very idea of “surging waters” suspended above the earth was nonsensical.

Nevertheless, the Society continued to use the notion of a vapor canopy at least through 2014.¹¹²

¹¹⁰ *Awake!*, February 8, 1957, p. 25.

¹¹¹ Brown-Driver-Briggs *Hebrew English Lexicon*, pp. 1062-1063.

Kittel, et al., *Theological Dictionary of the Old Testament*, Vol. XV, p. 577.

¹¹² *Awake!*, March 2014, p. 6.

Misrepresentation of Source References

Here I give another example of the Society's practice of misrepresenting source references, adding to the many other examples shown in this paper.

The July 15, 1968 *Watchtower* magazine had the article "Was There an Earthwide Flood" (pp. 419-423) that presented supposed evidences that Noah's Flood was a historical event. It gave several bogus arguments borrowed from young-earth creationists via the 1961 YEC book *The Genesis Flood*, mentioned above, including the notion of a "vapor canopy" that insulated the earth and produced hothouse conditions, and supplied much of the water for the Flood. The article said:

That earth's climate was uniformly warm at one time is commonly recognized. In an article concerning dinosaurs, *Scientific Monthly* of August 1949 observed:

"In those days the earth had a tropical or sub-tropical climate over much of its land surface, and in the widespread tropical lands there was an abundance of lush vegetation. The land was low and there were no high mountains forming physical or climatic barriers."

Several things are misrepresented here. The Society at that time was teaching that all animal life on land originated just 13,000 years ago on the 6th creative day of Genesis 1, and that the Flood occurred about 4,300 years before 1968. Therefore the typical Jehovah's Witness reader would understand the quotation from *Scientific Monthly* to be saying that the earth's climate was uniformly warm 4,300 years ago. But that article actually said:

Evidently large size was generally advantageous to the dinosaurs during the long course of their history, which began in the Triassic period of the Mesozoic era and extended through the Jurassic and Cretaceous periods. Many lines of dinosaurs evolved during the 100 million years or more of Mesozoic history in which they lived, and in most of these lines of ascent there was an early trend toward giantism. In those days the earth had a tropical or subtropical climate over much of its land surface, and in the widespread tropical lands there was an abundance of lush vegetation. The land was low, and there were no high mountains forming physical or climatic barriers.

So the uniformly warm climate was not said to be just 4,300 years ago, but "during the 100 million years or more of Mesozoic history" that, in 1949, scientists had dated to between about 200 million and 50-60 million years ago. So *The Watchtower's* reference to a climate that "was uniformly warm at one time" was a deliberate misrepresentation of what *Scientific Monthly* said.

Why would the Watch Tower writer deliberately hide from his readers what *Scientific Monthly* actually said? Obviously, because it contradicted the Society's tradition of 7,000-year creative days. This is a clear example of a Watch Tower writer's lying by equivocation: using a quotation with one meaning as if it had a meaning in line with the writer's claim.

The same misrepresentation was made in the 1976 book *Good News—To Make You Happy* (p. 83).

Scientific Monthly was also wrong: it stated that in the Mesozoic Era the earth had a generally tropical or subtropical climate everywhere, and there were no high mountains. Today that Era is dated to between 251 and 66 million years ago.

The article was written by Edwin H. Colbert, a prominent vertebrate paleontologist. Why he was wrong about information well known to geologists in 1949 and earlier is unclear. It was well understood by geologists at that time that high mountains had existed all through Mesozoic time, in the Triassic, Jurassic, and Cretaceous Periods, as well as at various times in the preceding Paleozoic Era. It

was also understood that, during that time, climate was on average warmer than today but also had cold periods. Of course, 1949 was just prior to the revolution in earth sciences that resulted in Plate Tectonics, a much better understanding of ice ages, etc. The full extent of mountain ranges at various times was nowhere nearly as well understood as today.

The 1949 book *Principles of Structural Geology* by Charles Nevin listed (p. 312) orogenies (mountain building episodes)¹¹³ immediately before or during the Mesozoic Era that built these ranges: Appalachians, Ouachitas, Urals, Sierra Nevadas, Atlas, Caucasus, Rocky Mountains, and Andes. Of course, since 1949 the story of building these mountains has been greatly filled in.¹¹⁴

The 1942 book *An Introduction to Historical Geology* by William Miller described the formation of the early Appalachian mountains at the close of the Permian Period (Paleozoic Era), immediately before the beginning of the Triassic Period (Mesozoic Era) (pp.178-180):

The Paleozoic era was brought to a close by one of the most profound physical disturbances in the history of North America. It has been called the Appalachian Revolution because at that time the Appalachian Mountain Range was born out of the sea by upheaval and folding of the strata... The enormous amount of sediment derived from it shows that Appalachia was high enough during nearly all of its history to undergo vigorous erosion.¹¹⁵ ... Toward the close of the Paleozoic era ... arose the great Appalachian Mountain range which, in its prime, was doubtless much loftier than it is today.

Miller also described the building of California's Sierra Nevada Mountains at the end of the Jurassic Period (p. 274):

The climax of the orogeny came at or near the close of the period. The Sierra Nevada Mountains, in their youth, were most likely a lofty range, higher, longer, and wider than today.

Miller further stated that, mostly likely, many other high mountain ranges of the American West also formed at that time.

Miller described the huge thicknesses of sediment that accumulated in various parts of what is now the west coast of North America during the Cretaceous Period due to erosion of the high mountains formed earlier (pp. 265-266):

Remarkable physical conditions must have obtained in western California, especially in the north, to have given rise to such a phenomenal thickness (50,000 ± feet) of sediments during Late Jurassic and Cretaceous times. Apparently the explanation is not far to seek because the newly uplifted lofty Sierra Nevada Mountains must have undergone vigorous erosion.

Miller further described the huge orogenies at the end of the Cretaceous Period (pp. 266-267):

The close of the Cretaceous period, or, what is the same thing, the close of the Mesozoic era, was marked by one of the most profound and widespread disturbances in the post-Proterozoic history of North America.

... Toward the close of the Cretaceous, there was vigorous deformation, including both folding and dislocations of the strata, not only throughout the Rocky Mountain district in North America from the Arctic Ocean to

¹¹³ <https://en.wikipedia.org/wiki/Orogeny>

¹¹⁴ https://en.wikipedia.org/wiki/List_of_orogenies

¹¹⁵ It is now known that the Appalachian Range was formed in stages from 480 through 260 million years ago. The last stage was when Africa collided with North America, forming the supercontinent Gondwana. The range rose at least as high as today's Alps and Rockies, and possibly as high as the Himalayas.

https://en.wikipedia.org/wiki/Appalachian_Mountains

https://en.wikipedia.org/wiki/Alleghanian_orogeny

<https://www.cntraveler.com/story/appalachian-mountains-may-have-once-been-as-tall-as-the-himalayas>

Central America, but also even along the line of the Andes Mountains to Cape Horn—altogether more than one-fourth of the way around the earth. This great crustal disturbance has been called the “Rocky Mountain (or Laramide) Revolution.” While the folding was usually not as intense as at the time of the “Appalachian Revolution,” nevertheless there were very considerable uplifts accompanied by more or less folding of the strata in many parts of the district ...

The portion of the Rocky Mountains situated in the northern United States and southern Canada suffered the severest deformation, where strata 50,000 to 76,000 feet thick were folded and faulted into a mountain range probably no less than 20,000 feet [6,000 meters] high...

The Rocky Mountain orogeny began well before the close of the Cretaceous, and it continued with more or less intensity into the Early Tertiary, but it reached a general climax near the close of the Cretaceous.

As for climate, Miller clearly stated that, while it was generally mild during the Mesozoic Era, it was not tropical (p. 271):

The temperature of North America in Early Cretaceous time was generally somewhat below normal, probably because the continent stood higher than usual, particularly in the west where high, wide mountains, formed at the time of the Sierra Nevada Revolution, were still in their prime. Similar lower temperatures were prevalent in many other parts of the world as shown by the distribution of plants and animal fossils. Glaciers existed in eastern Australia...

The general temperature again dropped at the close of the Cretaceous because of the great mountains formed at the time of the Rocky Mountain Revolution.

About the time immediately preceding the Mesozoic Era, Miller wrote (p. 182):

During Permian time there was a remarkable combination of climatic conditions, including extensive glaciation especially in the southern hemisphere (described beyond), widespread aridity in parts of North America and Europe, and conditions favorable for prolific growth of coal-forming plants in various parts of the world, all in a single period. Thus the climate of the Permian presented a striking contrast to the mild and rather uniform climate of the immediately preceding period. The concentration of the extensive glaciation over low-latitude, instead of high-latitude, regions is difficult to account for.¹¹⁶

In view of the above information, Edwin Colbert, in the *Scientific Monthly* article, was wrong about climate and the height of mountains “in those days”, i.e., in the Mesozoic Era: climate was not mostly tropical or sub-tropical, the land was not uniformly low, and there were very high mountains at various times in the Mesozoic and Paleozoic Eras. Therefore, what the 1968 *Watchtower* article claimed was false: earth’s climate was not uniformly warm at the “one time” it implied was immediately before Noah’s Flood, and the land was not low and free of mountains. Therefore, its entire argument that there was a “vapor canopy” that produced tropical, “hothouse” conditions is false.

The Watch Tower writer had no excuse for using Colbert’s wrong claims, as shown by the above-referenced geology books. Just a little care in research for accurate material, rather than grabbing whatever happened to support the writer’s preconceptions, would have sufficed. And of course, the Watch Tower Society has long claimed that all of its published material is produced under Jehovah’s guidance and direction—is “food in due season” from God. The many wrong, and often deliberately false, references and arguments in such published material prove that Jehovah’s Witnesses, under the direction of the Watch Tower Bible and Tract Society of Pennsylvania, are not guided by their God in any way.

¹¹⁶ These conditions have been explained by plate tectonics, continental drift, etc.

Here is another false reference in a Watch Tower publication:

The book *Good News—To Make You Happy* made another misrepresentation in connection with supposed evidence for Noah’s Flood. In a box titled “Evidence of the Global Deluge”, it quoted *Science News*¹¹⁷ as saying (p. 83):

“In almost every culture ... emerge strikingly similar tales of a great flood that swept away emerging civilizations and changed the face of the earth. New evidence gathered from sea-floor cores ... confirms the existence of such a universal deluge.”

There are several serious problems with this reference, and again we find serious dishonesty on the part of a Watch Tower writer. The full paragraph in *Science New* states:

In almost every culture, from the dim, prehistoric recesses of the early Neolithic period, emerge strikingly similar tales of a great flood that swept away emerging civilizations and changed the face of the earth. New evidence gathered from sea-floor cores not only confirms the existence of such a universal deluge and offers a tentative explanation, but raises the possibility that similar flooding could happen again.

The typical Jehovah’s Witness reader will naturally interpret “tales of a great flood” as referring to “Noah’s Flood”, but that in no way reflects what *Science News* actually said: “from the dim, prehistoric recesses of the early Neolithic period, emerge strikingly similar tales of a great flood”. The article is clear that the flood tales occurred over an *extended* period of time:

during the 10th millennium B.C. [when] the Laurentide ice sheet covering much of the Northern Hemisphere underwent a sudden surge, readvancing southward, where it quickly melted. The released water would have caused extensive inland flooding and raised the sea level perhaps some tenths of meters per year. The time estimate for the peak of this flooding, 9600 B.C., coincides almost exactly with Plato’s date for the inundation of Atlantis... [in bottom sediments] the surrounding seawater had suddenly become fresher when that sediment was being laid down... The sudden decrease of salinity coincides with a previously recognized glacial event: the so-called “Valders readvance,” in which the retreating arctic ice-cap suddenly spread again into what is now the northern part of the United States... [Paleoclimatologist Cesare] Emiliani and his colleagues conclude that the warming trend signaling the end of the last ice age caused this broad but thin ice sheet to “surge” toward lower latitudes, melting rapidly as it went, and sending floods of fresh water toward the oceans. “We postulate that ensuing flooding of low-lying coastal areas, many of which were inhabited by man, gave rise to the deluge stories common to many traditions,” Emiliani and his colleagues conclude. Presumably ocean-bottom cores from other coastal areas around the world will now be checked to see whether similar flooding occurred at about the same time as in the Gulf of Mexico. These investigations are sure to shed more light on what happened during the last ice age and the effect on emerging human civilization.

Clearly, then, the article was talking about an *extended* period of time during which northern hemisphere glaciers advanced and then retreated, melting during the retreat and sending many surges into the Gulf of Mexico. This cannot by any stretch of the imagination apply to what the Watch Tower Society was teaching in 1975 to have occurred during the single year of Noah’s Flood in 2370 BCE, nor to its version of young-earth creationist “flood geology” that claimed that there were no ice ages, that most fossils were emplaced during Noah’s Flood, that the earth’s climate was mostly tropical 4,300 earlier, etc.

The November 22, 1975 *Awake!* (p. 29) similarly misrepresented the meaning of this *Science News* article.

¹¹⁷ “Prehistoric Flood from Ice Surge”, *Science News*, Vol. 108 No. #14, October 4, 1975, p. 214. The book gives only the issue date.

Evolution: Definitions, Facts, etc.

First let's look at definitions of relevant terms and concepts. Without clear definitions of such, understanding will be limited, especially for a nonscientific audience.

What Is Evolution?

To clearly understand evolution as defined by scientists, as opposed to the caricatures often proposed by agenda-driven religionists, some preliminary remarks are in order.

The word evolution has a number of related definitions, but here we will be concerned with those related to the development of life, namely, the scientific theory of evolution. Some concise definitions are:¹¹⁸

Biological evolution ... is change in the properties of populations of organisms that transcend the lifetime of a single individual.

Evolution is a process that results in heritable changes in a population spread over many generations.

Evolution can be precisely defined as any change in the frequency of alleles within a gene pool from one generation to the next.

A Wikipedia article states:¹¹⁹

Evolution is change in the heritable characteristics of biological populations over successive generations.

“Population” refers to all of the individuals that make up a species (or “kind” if one insists on using nonscientific Bible words), or to groups of related species. “Gene pool” usually refers to a population, but taken broadly might also refer to all or many of the living things in the world. For example, the gene pool of “creatures that vaguely resemble modern cats” goes back over 40 million years, but the gene pool of essentially modern cats (housecats, lions, jaguars, etc.) goes back only about 5 million years and its member species are not the same as those of 40 million years ago. The change in the heritable characteristics of any of these groups is, by definition, evolution.

Note that these definitions say nothing about the *how* of evolution. They are basically descriptions of the *fact* that, as determined by the fossil record, the mix of species has changed over time since life first appeared, irrespective of what caused that change. This change observed in the fossil record is what scientists usually mean when they speak of *the fact of evolution*.

So evolution is defined both as a process of change and a scientific theory. The process is the set of changes over time observed in the fossil record, and the scientific theory is the scientific description of all the aspects of how, why and when those changes occurred.

Note that only religiously motivated people today, such as young-earth creationists, dispute the scientific timeline of evolution. Many scientists profess a variety of religious persuasions, and accept the standard timeline of evolution. Some hypothesize that some god or supernatural force directly created creatures in the sequence we see in the fossil record; some hypothesize that a supernatural force built in a tendency for life to evolve toward the ultimate goal of intelligent creatures like man. Of course, science has nothing to say about such supernatural forces, because they cannot be investigated by the scientific method.

¹¹⁸ <http://www.talkorigins.org/faqs/evolution-definition.html>

¹¹⁹ <https://en.wikipedia.org/wiki/Evolution>

What Is Science?

Various definitions are used for different purposes, but for our purposes these are good:

Science (from the Latin word *scientia*, meaning “knowledge”) is a systematic enterprise that builds and organizes knowledge in the form of testable explanations and predictions about the universe.¹²⁰

The intellectual and practical activity encompassing the systematic study of the structure and behaviour of the physical and natural world through observation and experiment.

A branch of knowledge or study dealing with a body of facts or truths systematically arranged and showing the operation of general laws.

Science might be divided into two major branches that often overlap: (1) science of the present; (2) science of the past. The former is often called “experimental science”. The latter is often called “historical science”:

Using knowledge that is already currently known to tell the story of what happened in the past.

RationalWiki states:¹²¹

“Historical science” is a term used to describe sciences in which data is provided primarily from past events and for which there is usually no direct experimental data, such as cosmology, astronomy, astrophysics, geology, paleontology and archaeology.

The National Center for Science Education points out on their website that:

Philosophers of science draw a distinction between research directed towards identifying laws and research which seeks to determine how particular historical events occurred. They do not claim, however, that the line between these sorts of science can be drawn neatly, and certainly do not agree that historical claims are any less empirically verifiable than other sorts of claims.

Michael Shermer writes in his book, *Why People Believe Weird Things*, that:

Science does deal with past phenomena, particularly in historical sciences such as cosmology, geology, paleontology, paleoanthropology, and archeology. There are experimental sciences and historical sciences. They use different methodologies but are equally able to track causality. Evolutionary biology is a valid and legitimate historical science.

“Forensic science” is a type of historical science:

The application of scientific principles and techniques to matters of criminal justice especially as relating to the collection, examination, and analysis of physical evidence.

The above discussion indicates that a common conception is that science entails direct observation of events or phenomena. True, but it can also entail *indirect* ‘observations’ and inferences, as in forensic and other historical sciences. These by their very nature deal with things that have already happened, and which are sometimes unique events. A forensic criminologist observes circumstantial evidence and, using careful scientific procedures and reasoning, deduces what happened in the past. Conclusions are often assigned probabilities ranging from low to virtually certain. Forensic criminology has become so accurate (but never certain) that criminal courts usually accept forensic results over eyewitness testimony because humans are very poor observers in many circumstances.

¹²⁰ <https://en.wikipedia.org/wiki/Science>

¹²¹ https://rationalwiki.org/wiki/Historical_and_operational_science

What Are Scientific Facts?

Here are some dictionary definitions of “fact”. See Wikipedia for a nice discussion.¹²²

A thing that is known or proved to be true.

Something that has actual existence, a piece of information presented as having objective reality, the quality of being actual.

A fact is a thing that is known to be consistent with objective reality and can be proven to be true with evidence.

Something that actually exists; reality; truth; something known to exist or to have happened; a truth known by actual experience or observation; something known to be true; something said to be true or supposed to have happened.

Event, item of information, or state of affairs existing, observed, or known to have happened, and which is confirmed or validated to such an extent that it is considered ‘reality.’

There are all manner of nitpicking philosophical objections to these definitions, such as “how do you know you didn’t pop into existence last Tuesday along with your memories?” and “how do we know what is absolute proof of a fact?” We will not deal with such useless nitpicking.

The above definitions rely on the notion of “what is known”. But exactly what is ‘known’, and how is it ‘known’, and who knows it? Again there are all manner of philosophical sidetracks, but everyone has a pretty good idea of what he thinks is ‘known’.

In a world where knowledge comes from empirical observations, absolute certainty does not exist. Absolute certainty exists only in mathematics and logic, and only because these are not about the empirical world (certainty of religious belief is obviously not in this category).

So what is a *scientific* fact? An absolute certainty? No. Such a fact would be a statement like “the moon is made out of rocks similar to those found on the earth.”

A good practical definition was given by Stephen Jay Gould:

In science, “fact” can only mean “confirmed to such a degree that it would be perverse to withhold provisional assent.”¹²³

Such facts would include: “the earth is approximately spherical”, “the earth revolves around the sun”, “Adolph Hitler killed millions of Jews and others”, and “the earth’s climate is getting warmer”. There are people who deny such facts, but reasonable people regard them as perversely stupid or as having a perverse agenda.

The point is that all “facts” must remain generally accepted observations, rather than “absolutely true” chunks of knowledge, because no one has a direct line to an absolute authority that has the final word.

What Are Scientific Theories?

“Theory” is commonly used in several senses: (1) in common parlance, a hunch, guess or hypothesis; (2) a “scientific theory”. The latter is in no sense a hunch, guess or hypothesis. Rather:

A scientific theory is an explanation of an aspect of the natural world that can be repeatedly tested and verified in accordance with the scientific method, using accepted protocols of observation, measurement, and evaluation of results... Established scientific theories have withstood rigorous scrutiny and embody scientific knowledge...

¹²² <https://en.m.wikipedia.org/wiki/Fact>

¹²³ Ashley Montagu, *Science and Creationism*, pp. 118-119.

The meaning of the term scientific theory (often contracted to theory for brevity) as used in the disciplines of science is significantly different from the common vernacular usage of theory. In everyday speech, theory can imply an explanation that represents an unsubstantiated and speculative guess, whereas in science it describes an explanation that has been tested and widely accepted as valid.¹²⁴

Thus we have the “Theory of Gravity”, the “Germ Theory of Disease”, “Atomic Theory”, the “Theory of Quantum Mechanics”, and so forth.

Summarizing the above:

In science, a fact is a repeatable careful observation or measurement (by experimentation or other means), also called empirical evidence... In the most basic sense, a scientific fact is an objective and verifiable observation, in contrast with a hypothesis or theory, which is intended to explain or interpret facts.¹²⁵

Methodological Naturalism

Two basic causes can potentially be assigned to any phenomenon—natural and supernatural. The former is simply what the universe does on its own, free of magical or supernatural influences. The latter entails powerful beings (gods, etc.) that by definition are not part of the natural universe. Over time, human societies have to a large extent evolved away from notions like animism, where gods or spirits or demons are said to animate many or all objects. This is especially true in science, where the notion that a god is involved in everyday phenomena was discarded long ago. If gods that act in unknown, arbitrary ways influence scientific observations, the observations could not be reliably repeated nor science be done.

Thus, of necessity modern science has discarded supernaturalism and assigns natural causes to all phenomena. That includes the origin and evolution of life.

That assignment is called methodological naturalism. RationalWiki states:¹²⁶

Methodological naturalism is the label for the required assumption of philosophical naturalism when working with the scientific method. Methodological naturalists limit their scientific research to the study of natural causes, because any attempts to define causal relationships with the supernatural are never fruitful, and result in the creation of scientific “dead ends” and God of the gaps-type hypotheses. To avoid these traps scientists assume that all causes are empirical and naturalistic, which means they can be measured, quantified and studied methodically.

It goes on to separate methodological from philosophical naturalism:

However, this assumption of naturalism need not extend beyond an assumption of methodology. This is what separates methodological naturalism from philosophical naturalism—the former is merely a tool and makes no truth claim, while the latter makes the philosophical—essentially atheistic—claim that only natural causes exist.

Of course, some people insist that philosophical and methodological naturalism are the same, and they have some justification for that. Others bring their religious sensibilities to the table and separate the two. That is why many scientists, such as Francis Collins¹²⁷ and Kenneth Miller,¹²⁸ can be deeply religious and do excellent scientific work.

It should be evident that the scientific method necessarily requires use of methodological naturalism.

¹²⁴ https://en.wikipedia.org/wiki/Scientific_theory

¹²⁵ <https://en.m.wikipedia.org/wiki/Fact>

¹²⁶ https://rationalwiki.org/wiki/Methodological_naturalism

¹²⁷ https://en.wikipedia.org/wiki/Francis_Collins

¹²⁸ https://en.wikipedia.org/wiki/Kenneth_R._Miller

Macroevolution and the Fossil Record

The term *macroevolution* is not entirely accepted in the scientific community, but has become common enough that many scientists use it. Most evolutionary biologists see no evidence that what some people call *microevolution* is qualitatively different from macroevolution, except that *by definition* microevolution is limited to change within species boundaries (which are often difficult or impossible to define).

Following are some definitions.

Microevolution

Evolutionary change within a species or small group of organisms, especially over a short period.

These changes can be due to changes in the frequency of expression of already existing genes, or to new mutations.

The Berkeley evolution website states:¹²⁹

Microevolution is simply a change in gene frequency within a population. Evolution at this scale can be observed over short periods of time—for example, between one generation and the next, the frequency of a gene for pesticide resistance in a population of crop pests increases. Such a change might come about because natural selection favored the gene, because the population received new immigrants carrying the gene, because some nonresistant genes mutated to the resistant version, or because of random genetic drift from one generation to the next.

Macroevolution

Major evolutionary change. The term applies mainly to the evolution of whole taxonomic groups over long periods of time.

The Berkeley evolution website states:¹³⁰

Macroevolution generally refers to evolution above the species level. So instead of focusing on an individual beetle species, a macroevolutionary lens might require that we zoom out on the tree of life, to assess the diversity of the entire beetle clade and its position on the tree.

Macroevolution encompasses the grandest trends and transformations in evolution, such as the origin of mammals and the radiation of flowering plants. Macroevolutionary patterns are generally what we see when we look at the large-scale history of life.

It is not necessarily easy to “see” macroevolutionary history; there are no firsthand accounts to be read. Instead, we reconstruct the history of life using all available evidence: geology, fossils, and living organisms.

Once we’ve figured out what evolutionary events have taken place, we try to figure out how they happened. Just as in microevolution, basic evolutionary mechanisms like mutation, migration, genetic drift, and natural selection are at work and can help explain many large-scale patterns in the history of life.

The basic evolutionary mechanisms—mutation, migration, genetic drift, and natural selection—can produce major evolutionary change if given enough time.

Many lists have been made of intermediate/transitional fossils.¹³¹ While most assume a good degree of ancestor/descendant relations among the creatures listed, the main point of these lists is the dating

¹²⁹ https://evolution.berkeley.edu/evolibrary/article/0_0_0/evoscales_02

¹³⁰ https://evolution.berkeley.edu/evolibrary/article/evo_48

¹³¹ https://en.wikipedia.org/wiki/List_of_transitional_fossils
<http://talkorigins.org/faqs/comdesc/>
<http://www.talkorigins.org/faqs/faq-transitional.html>

and sequencing of the creatures, i.e., to show that the fossil record documents the *fact* of macroevolution rather than the *how* of macroevolution.

Micro to Macroevolution

The Berkeley evolution website discusses “Evolution at different scales: micro to macro”:¹³²

Evolution encompasses changes of vastly different scales—from something as insignificant as an increase in the frequency of the gene for dark wings in beetles from one generation to the next, to something as grand as the evolution and radiation of the dinosaur lineage. These two extremes represent classic examples of micro- and macroevolution.

Everyday Theories Versus Scientific Theories

Many people do not understand the difference between everyday theories and scientific theories. The way scientists view what they call “the fact of evolution” is described by paleontologist Steven M. Stanley:¹³³

Creationists’ opposition to evolution raises the question of whether evolution is a fact—whether it has been proven. Most evolutionists would argue that it is almost certainly a real phenomenon, and a phenomenon powerful enough to be responsible for the varied forms of life we see around us. Absolute proof is another matter. Many of us adhere to the idea that science never proves anything. It provides no more than a very high degree of certainty. The connection between cigarette smoking and cancer offers a familiar example...

Many students of biological systems are even more certain that evolution has occurred than that smoking causes cancer, but because they believe that science does not prove theories, they are barred from claiming absolute proof. The classic example of our inability to prove in science relates to the process we call induction—the extraction of general principles or theories from bodies of data. A common cliché here is that we do not know with absolute certainty that the sun will appear in the East tomorrow. Throughout recorded history, the sun has shown in the East every morning. This means that it almost certainly will make an appearance tomorrow, but we have no proof: we cannot generalize that the sun will *always* appear in the East. Still, who would wager that the sun will not rise tomorrow?

Recognizing that absolute proof is not a legitimate issue, we then ask ourselves how many biologists untouched by religious fundamentalism do not consider evolution a near certainty. The answer, of course, is “very few.” How has this verdict been reached?

Although science does not prove, it does disprove. When a theory with many implications has withstood the threat of disproof for many years, it is granted a very high probability of being valid: it gains general acceptance, if not proof. There are two ways that a theory can be refuted. One is by the discovery of direct evidence opposing it. The second is by refutation of its corollaries or predictions... For more than a century, [evolution] has offered an enormous variety of testable predictions, yet none of these has been called into question to the degree that evolution has lost general support... There is an infinite variety of ways in which, since 1859, the general concept of evolution might have been demolished... The general concept of evolution has not merely resisted refutation, it has gathered strength from new developments. As we have seen, **fossil evidence that once seemed to indicate the almost instantaneous appearance of diverse groups (of the earliest marine life of the Cambrian, for example) has given way to more detailed fossil information that documents intervals of diversification...** The historical enrichment of the general theory of evolution is also evident in the growth of modern genetics, which swept aside the temporary obstacle of blending inheritance and went on to offer new levels of evolutionary understanding.

Zoologist Colin Patterson makes an excellent presentation of these issues as they relate to the theory of evolution in the chapter “Proof and disproof” in the book *Evolution*. Patterson says:¹³⁴

¹³² https://evolution.berkeley.edu/evolibrary/article/0_0_0/evoscales_01

¹³³ Steven M. Stanley, *The New Evolutionary Timetable*, pp. 169-172.

¹³⁴ Colin Patterson, *Evolution*, pp. 144-151.

Is the theory of evolution by natural selection proved? After so many pages of fact and argument, some may be disconcerted by a negative answer, and to read that certainty can no more be found in science than in any other way of thought. These ideas come from Sir Karl Popper, the great philosopher of science. Popper shows that proof, or certainty, exists only in mathematics and in logic, where it is trivial in the sense that the proven conclusions were already hidden in the premises. He thinks that science is distinguished from non-science (not nonsense), or metaphysics, or myth, not by proof, but by the possibility of disproof. The only characteristic of scientific theories is that they have consequences which might be falsified by observation or experiment, and a scientist is a person who is willing to relinquish his theory when it is falsified or refuted. Pseudo-scientific or metaphysical theories do not expose themselves to disproof in this way...

The theory of evolution is ... neither fully scientific, like physics, for example, nor unscientific, like history. Although it has no laws, it does have rules, and it does make general predictions about the properties of organisms. It therefore lays itself open to disproof. Darwin cited several sorts of observations which would, in his view, destroy his theory. In this he was certainly more candid than his opponents...

Darwin's potential tests may strike the reader as pretty feeble, or as tests of natural selection rather than evolution. But many discoveries, not foreseen by Darwin, provide more severe tests of the theory. These include Mendelian genetics; the real age of the earth; the universality of DNA and the genetic code; and the evidence of protein biochemistry. Evolution has survived all these with flying colours...

Using Popper's criterion, we must conclude that evolutionary theory is not testable in the same way as a theory in physics, or chemistry, or genetics, by experiments designed to falsify it. But the essence of scientific method is not testing a single theory to destruction; it is testing two (or more) rival theories, like Newton's and Einstein's, and accepting the one that passes more or stricter tests until a better theory turns up. So we must look at evolution theory and natural selection theory in terms of their performance against their competitors.

I will deal with evolution first, the belief that all organisms are related by descent and have diverged through a natural, historical process. This theory has only one main competitor, creation theory, though there are different stories of how the Creator went about His work. All creation theories are purely metaphysical. They make no predictions about the activities of the Creator, except that life as we know it is the result of His plan. Since we do not know the plan, no observation can be inconsistent with it. At one extreme there is the fundamentalist view that evidence of evolution, such as fossils, was built into the newly-created rocks to tempt us or test our faith. At the other extreme is the person to whom evidence of evolution only pushes the activity of the Creator further and further into the past. Both these modifications of the original creation myths are typical evasive moves, avoiding refutation or confrontation by modifying the original theory, or erecting subsidiary defensive theories around it...

At present, we are left with neo-Darwinian theory: that evolution has occurred, and has been directed mainly by natural selection, with random contributions from genetic drift, and perhaps the occasional hopeful monster. In this form, the theory is not scientific by Popper's standards. Indeed, Popper calls the theory of evolution not a scientific theory but 'a metaphysical research programme'. He means that though the theory is closer to metaphysics than to science, accepting it as true gives us a research programme, a new way of looking at and investigating the world. And through this research programme we can make progress in understanding the world...

Yet Popper warns of a danger: 'A theory, even a scientific theory, may become an intellectual fashion, a substitute for religion, an entrenched dogma.' This has certainly been true of evolutionary theory...

The Darwinian revolution triumphed [over creation based theories]. Following it, we can recognize a series of subsidiary revolutions... No doubt other revolutions are in store, and whether we choose to follow Popper's or [philosopher Thomas] Kuhn's understanding of science, the one lesson we can learn from both these thinkers is that today's theory of evolution is unlikely to be the whole truth. Yet today's neo-Darwinian theory, with all its faults, is still the best that we have. It is a fruitful theory, a stimulus to thought and research, and we should accept it until someone thinks of a better one.

After warning scientists about becoming overly confident that all aspects of the theory of evolution are well established, Colin Patterson states:¹³⁵

¹³⁵ Colin Patterson, *Evolution*, pp. 161-162.

There are some basic aspects of evolution, however, that are so close to being simple observation and measurement that evolutionists can claim to be right. In particular, geologic dating (both relative and absolute) is on extremely firm ground. To challenge the basic chronology of life forms would be like claiming that the sun is only ten thousand miles from the earth or that the earth is flat. In effect, we can “see” the geologic time scale. If organic evolution is defined as change in the biological makeup of life on earth over time then we certainly do have evolution and can “see” the fossil record of that process... Deducing the mechanisms of evolution is quite a different matter.

It is this aspect of evolution that most scientists are referring to when they say that evolution is a fact. By that they mean both microevolution and macroevolution, because the former is observed in real time, and the latter is deduced from massive amounts of fossil and genetic data. After all, *the basic meaning of evolution is change over time of the characteristics of populations of life forms*. The world used to have lots of dinosaurs; now it doesn't but has lots of mammals. Only by denying that this replacement happens, as young-earth creationists do, can one argue that macroevolution did not happen over the past 3.5+ billion years. In other words, macroevolution is historical evolution. For most scientists, the historical evolution observed in the fossil record implies the evolution of species. *The question of how these changes came about is an entirely separate matter*.

When scientists talk about evolution, sometimes they do not carefully distinguish between the *fact* of historical evolution and the *processes* of biological evolution. But most of the time context easily determines what is being spoken of.

The Watch Tower Society never substantively discusses the above issues, even though they are fundamental to achieving an understanding of the world in which we live. Instead the issues are oversimplified to the point that a reader gets no real understanding. I believe that this is the case for two main reasons: Watch Tower writers are largely ignorant of science, and Watch Tower leaders have a vested interest in keeping their followers ignorant of the details of sticky subjects like evolution. That is why, for example, the Society has never published a retraction of its old view that the creative days of Genesis were 7,000 years long, or of its obsolete view that young-earth creationist “flood geology” accounts for most of the earth's geological features.

The Society argues, in effect, that evolution is not a “fact” because it is a “theory”. As shown above, this argument is simply wrong. It also confuses the *fact* of evolution as seen in the fossil record with the various *mechanisms* that have been proposed to explain these facts.

The previously cited article by Stephen Jay Gould in *Science and Creationism* has more to say on fact versus theory, which further shows why Watch Tower reasoning is wrong:¹³⁶

In the American vernacular, “theory” often means “imperfect fact”—part of a hierarchy of confidence running downhill from fact to theory to hypothesis to guess. Thus the power of the creationist argument: evolution is “only” a theory and intense debate now rages about many aspects of the theory. If evolution is worse than a fact, and scientists can't even make up their minds about the theory, then what confidence can we have in it? Indeed, President Reagan echoed this argument before an evangelical group in Dallas when he said (in what I devoutly hope was campaign rhetoric): “Well it is a theory. It is a scientific theory only, and it has in recent years been challenged in the world of science—that is, not believed in the scientific community to be as infallible as it once was.”

Well, evolution is a theory. It is also a fact. And facts and theories are different things, not rungs in a hierarchy of increasing certainty. Facts are the world's data. Theories are structures of ideas that explain and interpret facts. Facts don't go away when scientists debate rival theories to explain them. Einstein's theory of gravitation replaced Newton's in this century, but apples didn't suspend themselves in midair, pending the outcome. And

¹³⁶ Ashley Montagu, *Science and Creationism*, pp. 118-119.

humans evolved from ape-like ancestors whether they did so by Darwin's proposed mechanism or by some other yet to be discovered.

Moreover, "fact" doesn't mean "absolute certainty"; there ain't no such animal in an exciting and complex world. The final proofs of logic and mathematics flow deductively from stated premises and achieve certainty only because they are *not* about the empirical world. Evolutionists make no claim for perpetual truth, though creationists often do (and then attack us for a style of argument that they themselves favor). **In science, "fact" can only mean "confirmed to such a degree that it would be perverse to withhold provisional assent."** I suppose that apples might start to rise tomorrow, but the possibility does not merit equal time in physics classrooms.

I will again point out that the above reasoning in no way precludes belief in some sort of creator, i.e., in theistic evolution. As mentioned above, such a creator might have used any number of means to cause life forms to evolve. The only objection to theistic evolution comes from dogmatic, Bible worshipping Fundamentalists who base their objections on their personal prejudices and interpretations of Bible doctrines, not on science. Of course, as shown on page 155, the Creator God of the Bible is logically impossible.

One major problem with any sort of Creator is that one must see him as "intervening again and again to carry out a series of special creation events so closely graded that the scientists of the present misinterpret these progressive appearances and disappearances as the result of evolutionary change and extinction."¹³⁷ While possible, this seems completely unreasonable. But that is what the fossil record shows must have happened if a supernatural Creator created life. Unless, of course, one rejects the geological time frame of the fossil record, which the Watch Tower Society has not done since the 1980s. I suspect that a handful of Watch Tower writers dimly understand these issues, which is why they no longer write about them.

¹³⁷ Ashley Montagu, *Science and Creationism*, pp. 51-52.

Examples of Macroevolution

As mentioned previously, there are hundreds of examples of macroevolution in the fossil record. Note once again that this refers, not to the *how* of evolution, but to the *fact* of evolution. Some examples are extremely spotty and some show fine gradations of change over relatively short time periods. Below are examples of both. For brevity I will often use the standard abbreviation Ma for “million years ago”.

This part of this paper is a bit long, but necessarily so because it is intended for an audience not well educated in science or evolution, including and especially Jehovah’s Witness leaders and Writing Staff members. It is also not meant to be a comprehensive look at evolution and related subjects, but is more of a survey intended to spur readers to educate themselves.

Precambrian Life

Precambrian time spans from the earth’s beginning 4.6 billion years ago to the Cambrian Period 541 million years ago.¹³⁸ Life first appeared more than 3.5 billion years ago in the form of microscopic archaea and bacteria. Bacteria early on formed stromatolites, or mounds of bacterial mats now turned to stone.¹³⁹ Paleontologists have identified several periods within this time where multicelled animals appeared. Somewhere between about 1,500 and 800 Ma the first sponge-like creatures appeared,¹⁴⁰ although their identification is disputed.

The Ediacaran Period

Among the earliest multicelled creatures are those of the Ediacaran Period at the end of Precambrian time, from 635-600 Ma to 541 Ma.¹⁴¹ These have been found all over the world, and were all soft-bodied forms that are generally very thin and flat. They have structures that are difficult to identify as specific organs. Toward the end of that period macroscopic life forms with mineralized hard parts appeared. These are usually referred to as the Small Shelly Fossils.¹⁴² They are generally found only as bits and pieces of tiny shells or shell-like structures. This appearance ushered in the Cambrian Period.

Since the fossil record for Precambrian life is so sparse, virtually nothing can be said about the evolution of life during it, other than the obvious fact that various life forms appeared and went extinct. This is macroevolution on the broad scale.

The Cambrian Period

This period lasted from 541 to 485 Ma.¹⁴³ The macroscopic life forms with hard parts that had appeared late in the Ediacaran Period rapidly diversified into many other forms. This was the so-called Cambrian Explosion¹⁴⁴ that was not an *explosion* of life so much as a *relatively* rapid diversification over some 10-30 million years (sources differ) of most of the body plans of life that exist today. Of

¹³⁸ <https://www.britannica.com/science/Precambrian>

¹³⁹ <https://en.wikipedia.org/wiki/Stromatolite>

¹⁴⁰ <https://en.wikipedia.org/wiki/Precambrian>

¹⁴¹ https://en.wikipedia.org/wiki/Ediacaran_biota

¹⁴² https://en.wikipedia.org/wiki/Small_shelly_fauna

¹⁴³ <https://en.wikipedia.org/wiki/Cambrian>

¹⁴⁴ https://en.wikipedia.org/wiki/Cambrian_explosion

See also Douglas Erwin and James Valentine, *The Cambrian Explosion: The Construction of Animal Biodiversity*.

course, the Ediacaran Period saw the beginnings of many of these body plans, so any posited explosion of life would have to be extended back into it, and would have lasted some 60-95 million years. That is hardly an ‘explosion’. Virtually all of the Ediacaran forms went extinct during the Cambrian.

Arthropods, including trilobites, first appeared. So did the apparent ancestors of fish, velvet worms, molluscs, various worms, jellyfish, sea anemones, new forms of sponges, and forms with no modern counterparts. Predators such as *Anomalocaris* first appeared. Trilobites with bites taken out of them appeared in the fossil record; some show evidence of healing. Trace fossils such as tracks and burrows became common.

As with all later life, several extinction events occurred in the Cambrian, followed by radiations¹⁴⁵ where new life forms proliferated. These several radiations, followed by extinctions, show that macroevolution in the broad sense continued to occur.

Evolutionary ‘arms races’¹⁴⁶ began in the Cambrian, where predators gradually became more competent predators, and prey became more competent at defense. These ‘arms races’ are evident throughout the fossil record, and exist today.

Vertebrates in the form of primitive fish appeared about 530 Ma.¹⁴⁷ From then on macroevolution is shown in the fossil record by many cycles of extinction followed by radiation (proliferation) of new species. Many amazing varieties appeared, including sharks and the monstrous, predatory *Placoderms*.¹⁴⁸ One of the largest, *Dunkleosteus terrelli*, was 6 meters (20 ft) long.¹⁴⁹

Once again we have the question of whether this macroevolution was the product of naturalistic evolution or of creation of thousands of distinct species by some Creator. And of course, we have the question of how a Creator capable of creating a super predator such as *Dunkleosteus* could possibly be called “loving”. And what might be said of a “loving Creator” who originated ‘evolutionary arms races’ half a billion years ago?

Ammonoid Macroevolution Spans Six Geological Periods

Ammonoids, or ammonites,¹⁵⁰ now extinct, were molluscs in the Class Cephalopoda. They generally resembled the modern nautilus but were in a different family. They first appeared in the early Devonian Period¹⁵¹ about 400 Ma and went extinct along with the dinosaurs at 66 Ma. During their long existence many new varieties appeared and, from time to time, most went extinct. Figure 59 below¹⁵² shows a tree diagram of these appearances and extinctions.

¹⁴⁵ https://en.wikipedia.org/wiki/Evolutionary_radiation

¹⁴⁶ https://en.wikipedia.org/wiki/Evolutionary_arms_race

¹⁴⁷ https://en.wikipedia.org/wiki/Evolution_of_fish

¹⁴⁸ <https://en.wikipedia.org/wiki/Placodermi>

¹⁴⁹ <https://en.wikipedia.org/wiki/Dunkleosteus>

¹⁵⁰ <https://en.wikipedia.org/wiki/Ammonoidea>

¹⁵¹ <https://en.wikipedia.org/wiki/Devonian>

¹⁵² Niles Eldredge, *Life Pulse: Episodes from the Story of the Fossil Record*, 1987, p. 168.

Note the virtually instantaneous abruptness with which the extinctions generally occurred, and the rapid radiation into a large variety of new forms after each extinction event.

It would be interesting to hear an explanation for this pattern from Watch Tower writers. “God did it” is not an explanation. Nor is the standard refrain, “do not ask unprofitable questions”.

Ammonoid macroevolution produced a great variety of body plans, ranging from tightly coiled shells up to 5 feet in diameter to straight shells as much as 30 feet long. The internals of the shells were extremely varied, so much so that paleontologist Niles Eldredge wrote:¹⁵³

I mentioned in chapter 4 that early ammonoid history bears the stamp of early “experimentation,” in which a variety of designs was, so to speak, tried out before the basic ammonoid design for all times was settled upon.

Ammonoid macroevolution clearly shows that thousands of forms appeared and disappeared over some 350 million years. How and why all this change occurred has nothing to do with the fact that the fossil record shows that this macroevolution *did* occur.

If theistic evolution of some sort occurred, one wonders why the Creator did so much “experimentation”.

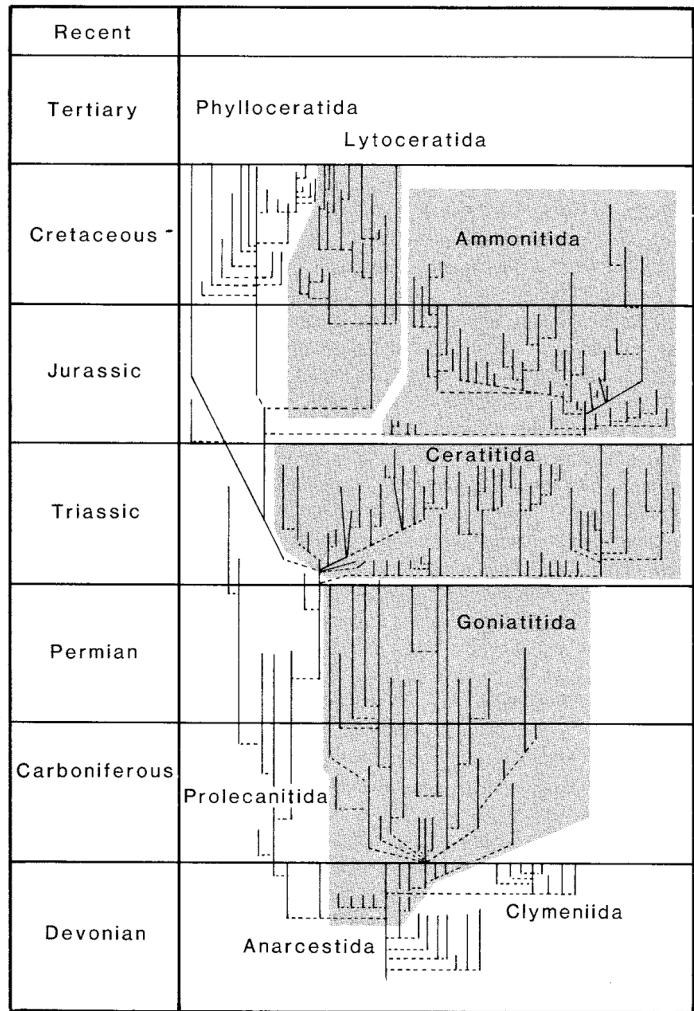


FIGURE 59 The ammonoid family tree.

¹⁵³ Eldredge 1987, p. 159.

Fish Come Out of the Water

A variety of evidence shows that around 480 Ma, plants first appeared on the land, and some marine arthropods¹⁵⁴ gave rise to land-dwelling arthropods, such as insects, spiders, etc.¹⁵⁵ We will not consider this further here.

By about 400 Ma certain fish populations gave rise to the earliest creatures that seem later to have diversified into all manner of land-dwelling tetrapods (four-legged creatures). Discoveries since 1980 have made obsolete many of the older notions of the details of this diversification. Much terminology has also been updated as new discoveries in genetics and the fossil record have obsoleted many of the old categories of creatures. The old Linnaean system of vertebrate classification had fish, amphibians, reptiles, etc., but in general these have been rearranged into categories in line with cladistics.¹⁵⁶ In this scheme, measured characteristics are interpreted as indicative of a “most recent common ancestor”. In general, genetic analysis well supports the cladistic classifications.

In cladistic classifications there are “natural groups” which contain at the root a small group of animals that appear to be ancestral to all other animals in the larger group. Thus, one small group of amphibians appears ancestral to all tetrapods, and so the tetrapods are called a “clade”.

Figure 10.1 on the right is borrowed from Prothero (2017), p. 226, and shows tetrapod relationships. Note the branch point labeled “Tetrapods”; all four-legged creatures below it are in the tetrapod clade.

This diagram is especially informative to those confused about ancestor/descendant relationships. For example, while several large groups (Ichthyostegids, Temnospondyls, Anthracosaurids, etc.) appear earlier in the fossil record than Synapsids and Reptiles, they are not necessarily ancestral to the latter because the latter may be just “cousins” to the former. Remember that the fossil record is spotty and does not contain representatives of every species that ever lived. It is getting better because every year brings new discoveries, but it has a long way to go. That is why new discoveries sometimes force a significant rearrangement of cladistic classifications.

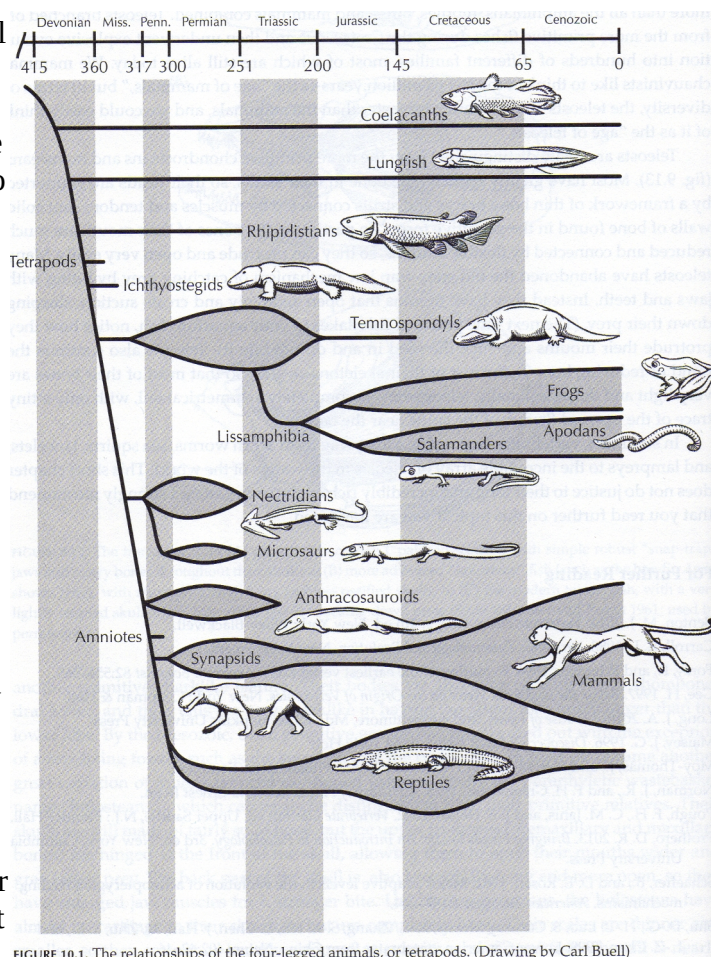


FIGURE 10.1. The relationships of the four-legged animals, or tetrapods. (Drawing by Carl Buell)

The sections below flesh out some details of this section.

¹⁵⁴ <https://en.wikipedia.org/wiki/Arthropod>

¹⁵⁵ https://en.wikipedia.org/wiki/Evolution_of_insects

¹⁵⁶ <https://en.wikipedia.org/wiki/Cladistics>

Fish to Aquatic Amphibians

This section really should be titled “Fish to Tetrapods” because the earliest tetrapods (four-legged creatures) are not classified by biologists as amphibians. True amphibians appear a bit later in the fossil record. But the word “amphibians” has been part of common parlance for several hundred years.

Refer to Figure 10.1 above to put this section in context.

The Devonian Period is often called the Age of Fishes, because a wide variety of fish and fish-like creatures appeared in the fossil record of 419 to 359 Ma. In the Middle Devonian, at about 390 Ma, the lobe-finned fishes appeared. Some had characteristics such as well developed lungs and the ability to crawl out of the water onto the land for short periods of time. At about 375 Ma there appeared another species called *Tiktaalik*¹⁵⁷ that had characteristics so intermediate between its fish predecessors and its tetrapod¹⁵⁸ successors that for a while it was a matter of debate among paleontologists as to whether it should be classified as a fish or tetrapod. Note that the terms “predecessors” and “successors” here do not imply ancestor/descendant relationships, but placement in time in the fossil record. By about 368-365 Ma the first land-dwelling tetrapods—amphibians, more or less—had appeared.

The discovery of *Tiktaalik* in 2004 on Ellesmere Island in Canada by the team of paleontologist Neil Shubin¹⁵⁹ is a prime example of an evolutionary prediction coming true. In a book about general evolution, Shubin wrote an account of the discovery and his activities leading up to it.¹⁶⁰ In 2015 he gave a brief talk about all this, which was recorded on video.¹⁶¹

Shubin had been interested in the transition between fish and tetrapods for some years. In the late 1990s he and some colleagues reasoned that, because fish with amphibian-like features were found in rocks dated to about 385 Ma, and the earliest tetrapods were in rocks from about 365 Ma, any intermediate forms should be in rocks from about 375 Ma. After much research, they found that rocks of the appropriate age and characteristics existed on Ellesmere Island in the Canadian Arctic. In 1999 they began hunting fossils there, and five seasons later in 2004 found the expected fossils, which they named *Tiktaalik*, an Inuit word meaning “large freshwater fish”.

In the decades before *Tiktaalik* was found, a variety of fish fossils were found which, when lined up by their dates of appearance in the fossil record, along with a dated sequence of tetrapod fossils, gave every indication of an evolution of body structure from fish to tetrapods and other amphibians.¹⁶² The old-earth creationist alternative is that some Creator created this closely graded sequence over millions of years (see p. 63), which seems highly unlikely (a tinkering Creator?) and is at odds with Watch Tower teaching.

Below is a graphic showing representative creatures that are dated before and after *Tiktaalik*.¹⁶³ The dates are approximate. Note that these creatures are only a few among many that have been discovered. They are not specifically arranged in ancestor-descendant sequence but by the age of the strata in which they were found. Anyone not blinded by creationist prejudice can see the graded sequence of body plans from definite fish, through *Tiktaalik*, to definite land-dwelling tetrapod. Honest scientists who are Christians have no problem accepting the fossil record.¹⁶⁴

¹⁵⁷ <https://en.wikipedia.org/wiki/Tiktaalik> https://www.nsf.gov/news/news_summ.jsp?cntn_id=106807

¹⁵⁸ <https://en.wikipedia.org/wiki/Tetrapod>

¹⁵⁹ https://en.wikipedia.org/wiki/Neil_Shubin

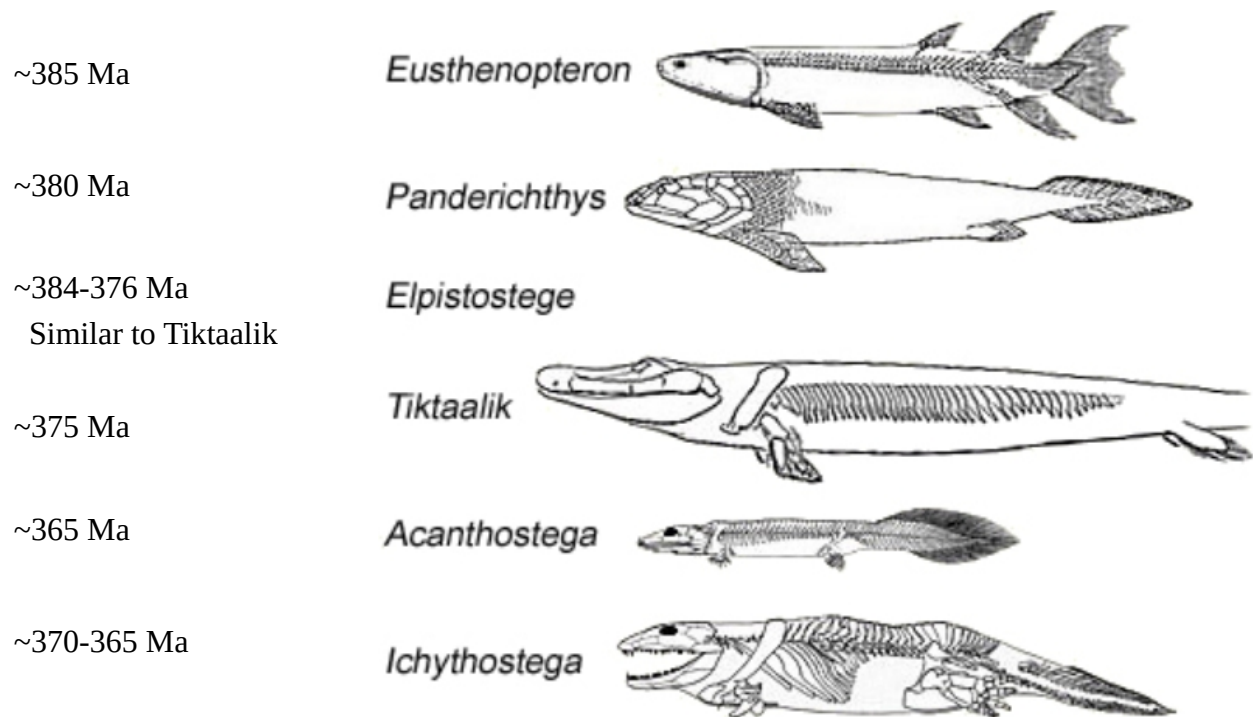
¹⁶⁰ Neil Shubin, *Your Inner Fish: A Journey Into the 3.5-Billion-Year History of the Human Body*.

¹⁶¹ <https://www.ibiology.org/evolution/tiktaalik/>

¹⁶² See https://en.wikipedia.org/wiki/Evolution_of_tetrapods for a graphic.

¹⁶³ <https://www.earthhistory.org.uk/transitional-fossils/kitzmillerv-dover>

¹⁶⁴ <https://chem.tufts.edu/science/evolution/fish-amphibian-transition.htm>



Much more material than is discussed before and after this section is included in proper books on paleontology and the fossil record, such as Donald Prothero's *Evolution: What the Fossils Say and Why it Matters*.

Aquatic Amphibians to Land Dwellers

Because this paper is not intended to be a textbook on macroevolution—there are plenty of excellent resources in any college library—it discusses a few details of macroevolution to disabuse some readers of any notion that the fossil record disproves macroevolution, as Watch Tower writers claim. In the present sections I am not saying *how* macroevolution occurred—only that it *did* occur as recorded in the fossil record. But as hinted at above, the fossil record and genetic studies strongly indicate that ancestor/descendant relationships exist.

In the 1990s, paleontologists began revising terminology due to new fossil discoveries and genetic analyses. Today, the term “Amniote” takes in all vertebrates classed as more advanced than traditional amphibians, including Synapsids (was ‘mammal-like reptiles’), Mammals, true Reptiles, Ichthyosaurs, Plesiosaurs, Mosasaurs, Pterosaurs, Dinosaurs and Birds. Amniotes encompass all egg-laying tetrapods and creatures apparently descended from the earliest of them.¹⁶⁵ Figure 11.1 below is borrowed from Prothero, p. 244.

The paper is a bit obsolete, so the dates may be off a bit.

¹⁶⁵ Prothero 2017, ch. 11.

The term amniote comes from the fluid-filled egg sac called the amnion, which is found, one way or another, in all land-dwelling animals today. In egg-laying animals, it is encased in a shell-covered egg, such as in turtles and birds. In animals that give live births—placentals and marsupials like elephants and kangaroos—it is carried in the animal's womb.

The earliest terrestrial tetrapods were the Anthracosaurs¹⁶⁶ and the earliest true Amniotes. Because of a dearth of fossils, the classification Anthracosaur appears to be poorly defined, having very different definitions depending on the source. Prothero (2017) gives his take, which we will leave for the reader. The Anthracosaurs diversified into many forms, but they remained separate and distinct from the Synapsids.

A lizard-like creature called *Westlothiana lizziae* appeared at about 338 Ma¹⁶⁷ which had characteristics of the earliest tetrapods and slightly later true amniotes. Classification is not fully agreed upon. The point is that its characteristics are intermediate between creatures earlier and later in time, showing a macroevolutionary sequence.

Somewhat later, the known Synapsids appear, but the earliest forms do not seem to be known.

Following Figure 11.1, once the Synapsids appeared, they gave rise to a wide variety of animals. Prothero (2017), chapter 13, covers this in detail. Most of the Permian synapsids went extinct in the Great Permian Extinction event, but a few small-bodied forms survived into the Triassic Period and gradually morphed into the true mammals.

During the Triassic Period many new forms appeared, usually leaving fairly detailed fossil records of the ongoing macroevolution. Prothero (2017) presents diagrams showing the development over time of ichthyosaurs, plesiosaurs and crocodylians. There exists an incredible number of fossils of these creatures, appearing and then disappearing from the record over geological time, and again illustrating macroevolution in action.

The Triassic Period also saw the appearance of what I will call proto-dinosaurs, and then true dinosaurs. The next Periods, the Jurassic and Cretaceous, saw the appearance of a spectacular array of

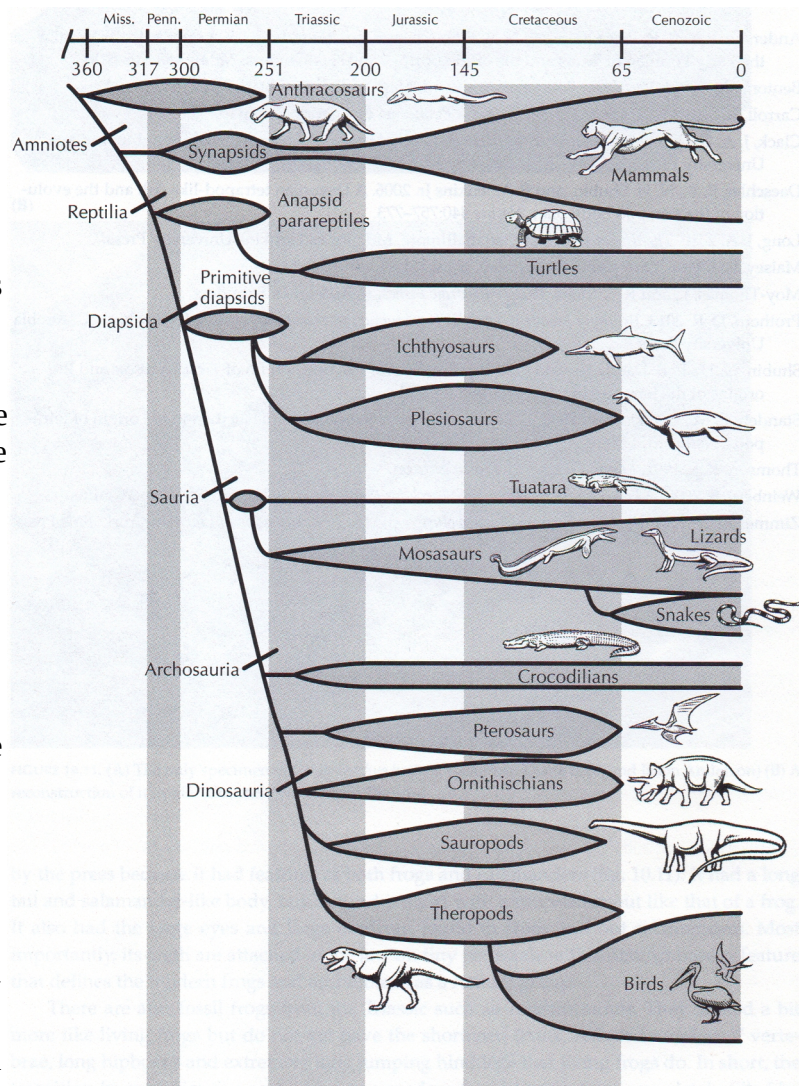


FIGURE 11.1. Family tree of the amniotes. (Drawing by Carl Buell)

¹⁶⁶ <https://en.wikipedia.org/wiki/Anthracosauria>

¹⁶⁷ <https://en.wikipedia.org/wiki/Westlothiana>

new forms. Snakes also made their appearance, although the fossil record is too sparse to say much about the earliest forms. Apparently they developed from lizards that had legs, which gradually lost them. Some modern snakes have vestigial hind legs. Fossil snakes from the early Cretaceous onward have been found that had fully functional hind legs, and others that had vestigial front and hind legs. See Prothero (2017), pages 256-259, for details.

From Amniotes to Synapsids to Mammals

One of the best documented macroevolutionary series in the fossil record is that from primitive amniotes to synapsids to mammals. This occurred from about 350 Ma in the Early Carboniferous Period to about 180 Ma in the Early Jurassic Period.

Much of the discussion in this section is based on Prothero (2017), chapter 13.

Referring back to Figures 10.1 and 11.1, note that the line of fossils leading to synapsids splits from the line leading to reptiles at about 315 Ma, so they are completely separate cladistic groups from that point on. The earliest synapsids and earliest reptiles are so close in most features that it takes experts to tell them apart. The term “synapsid” refers to one of the main diagnostic features of the group: one hole in the skull just behind the eye socket. This is in contrast with the “anapsids” or earliest reptiles, which had no holes, and the “diapsids” such as dinosaurs and most modern reptiles, which had two holes.

In Figures 13.2 are pictures of synapsid fossil skeletons taken from Prothero (2017), pp. 292-293. The ages of the four animals pictured are about 300, 275, 260 and 235 million years.

The progression of the skulls and skeletons from primitive to more advanced is evident. This progression, or change in the mix of species that make up populations, is by definition macroevolution.

The first two are “pelycosaurs”,¹⁶⁸ the next is an early “therapsid”¹⁶⁹ called a Gorgonopsian¹⁷⁰ (some of these were truly terrifying) and the last is a “cynodont”.¹⁷¹ Prothero (2017) gives brief descriptions; much more information can be found online and in college libraries.

The cynodont therapsids first appeared in the Late Permian period about 260 Ma. Some smaller types survived the Great Permian Extinction at 251 Ma and diversified into many forms during the Triassic Period. Jaw muscles became larger and the postcanine teeth became specialized for chewing and cutting, much like those in today’s cats and

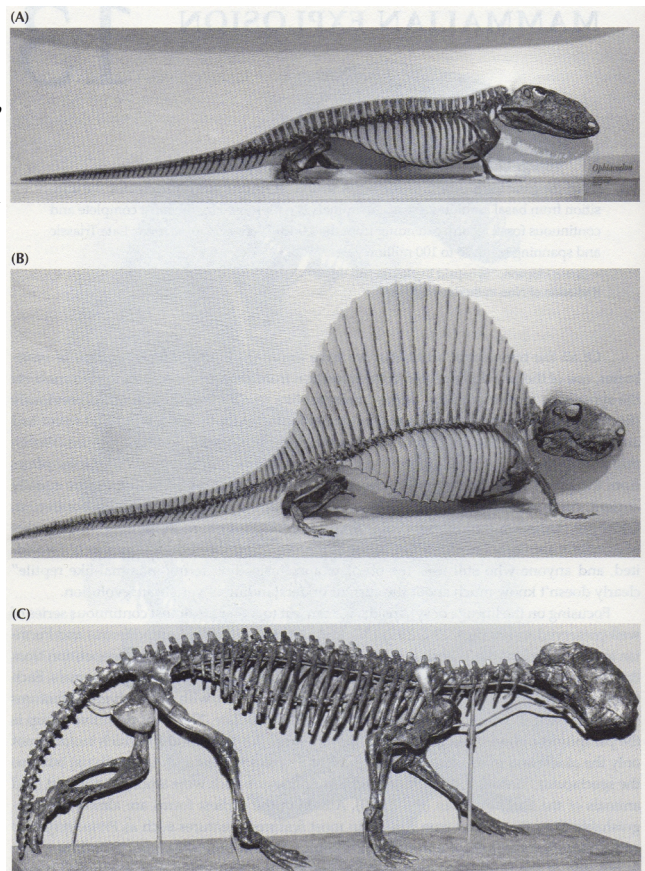


FIGURE 13.2. Skeletons of the various transitional fossils among the synapsids. (A) The very primitive early Permian “pelycosaur” *Ophiacodon*. (B) The finbacked pelycosaur *Dimetrodon*. (C) The predatory gorgonopsian *Lycnops*, with its large wolf-like skull, big canines, and more upright posture. (D) The highly mammal-like cynodont *Thrinaxodon*, which was the size of weasel. (Photos courtesy R. Rothman)

¹⁶⁸ <https://en.wikipedia.org/wiki/Pelycosaur>

¹⁶⁹ <https://en.wikipedia.org/wiki/Therapsid>

¹⁷⁰ <https://en.wikipedia.org/wiki/Gorgonopsia>

¹⁷¹ <https://en.wikipedia.org/wiki/Cynodont>

dogs. The posture became more upright and specialized for running. While the synapsids before the Permian Extinction could be as much as 10 feet long, the cynodonts were much smaller, about the size of weasels and small dogs. The latest cynodonts were so mammal-like that they have been classified as mammals.

Prothero states (p. 296):

The transition from the most primitive synapsids all the way to mammals is so smooth that it is rather arbitrary where to break the continuous sequence and begin calling advanced cynodonts mammals.

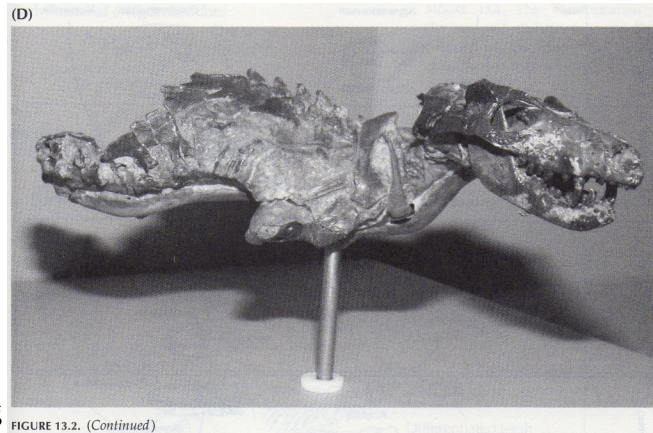


FIGURE 13.2. (Continued)

Figure 13.3 shows how synapsid skulls changed from the early Permian to the early Jurassic Periods. Note that these are arranged in a time sequence, not in a hypothesized ancestor/descendant sequence. These are only representative; far more types have been cataloged.

Again see Prothero (2017) for details.

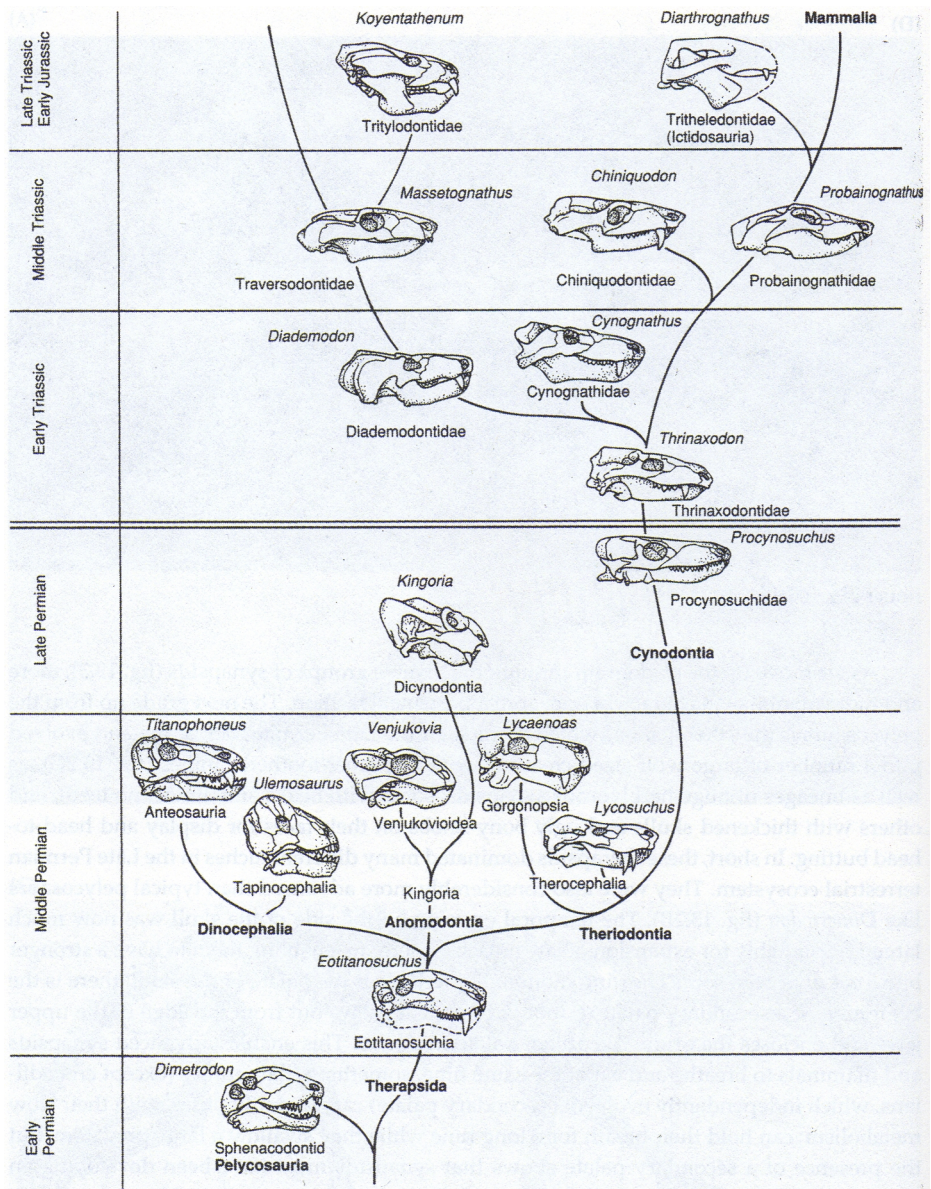


FIGURE 13.3. The evolution of the synapsid skulls from primitive pelycosaurs through therapsids and cynodonts to true mammals. (From Kardong 1995; reproduced by permission of the McGraw-Hill Companies)

Figure 13.4 shows representative animals showing the changes from the Early Permian *Dimetrodon* through cynodonts to true mammals. Again this illustrates the macroevolution seen in the fossil record.

Note that a 1 cm scale has been included for each animal.

Early mammal (*Megazostrodon*)

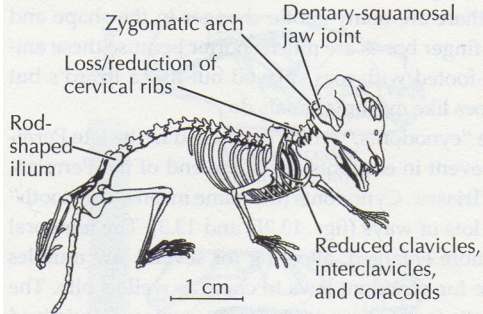
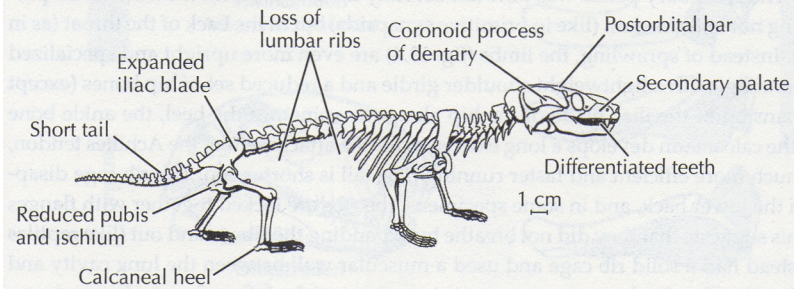
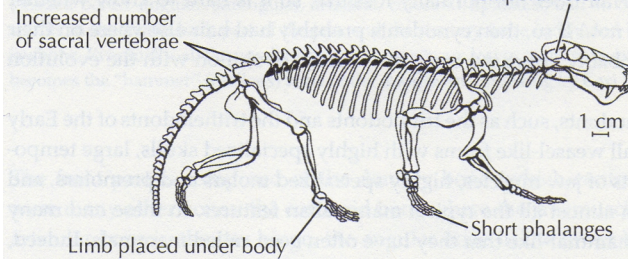


FIGURE 13.4. The transformation of the synapsid skeleton from primitive pelycosaurs like *Dimetrodon* through cynodonts to true mammals. (Drawing by Carl Buell).

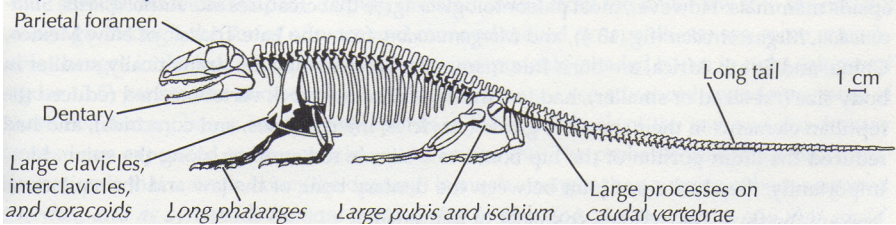
Cynodont therapsid (*Thrinaxodon*)



Noncynodont therapsid (*Lycaenops*)



Pelycosaur (*Haptodus*)



Synapsid to Mammal Jaw / Ear Evolution

As shown above, there are plenty of fossils that are intermediate in form between synapsids and mammals. Using the obsolete term “reptiles” instead of “synapsids”, Stephen Jay Gould said of some:¹⁷²

... consider another example with evidence of structurally intermediate stages—the transition from reptiles to mammals. The lower jaw of mammals contains but a single bone, the dentary. Reptiles build their lower jaws of several bones. In perhaps the most fascinating of those quirky changes in function that make pathways of evolution, the two bones articulating the upper and lower jaws of reptiles migrate to the middle ear and become the malleus and incus (hammer and anvil) of mammals.

Creationists, ignorant of hard evidence in the fossil record, scoff at this tale. How could jaw bones become ear bones, they ask. What happened in between? An animal can't work with a jaw half disarticulated during the stressful time of transition.

The fossil record provides a direct answer. In an excellent series of temporally ordered structural intermediates, the reptilian dentary gets larger and larger, pushing back as the other bones of a reptile's lower jaw decrease in size. We've even found a transitional form with an elegant solution to the problem of remaking jaw bones into ear bones. This creature has a double articulation—one between the two bones that become the mammalian hammer and anvil (the old reptilian joint), and a second between the squamosal and dentary bones (the modern mammalian condition). With this built-in redundancy, the emerging mammals could abandon one connection by moving two bones into the ear, while retaining the second linkage, which becomes the sole articulation of modern mammals.

No one knows *why* this jawbone/earbone change occurred, but the fossil record shows that it *did* occur. This is a perfect example of macroevolution.

As to the *why* question, creationists will undoubtedly say, “God did it!” but this is neither scientific nor informative. Was God experimenting?

In the three decades since Gould wrote the above, more discoveries about jawbone/earbone evolution have taken place. Here are more details:

The amazing series of intermediate forms found in the synapsids and mammals in the transition, from the fully ‘reptilian’ jawbone/earbone structure in the earliest forms, to the fully mammalian structure in the true mammals that lived a hundred million years later, is illustrated in Figures 13.5 and 13.7.

The dentary bone holds the teeth. In basal synapsids (and modern reptiles) the attached angular bone is terminated with the articular bone, forming a hinge with the quadrate bone, which is attached to the skull. These butt up against the bones of the middle ear, so that in reptiles and basal synapsids, the animal essentially hears through its jaw. Since there are

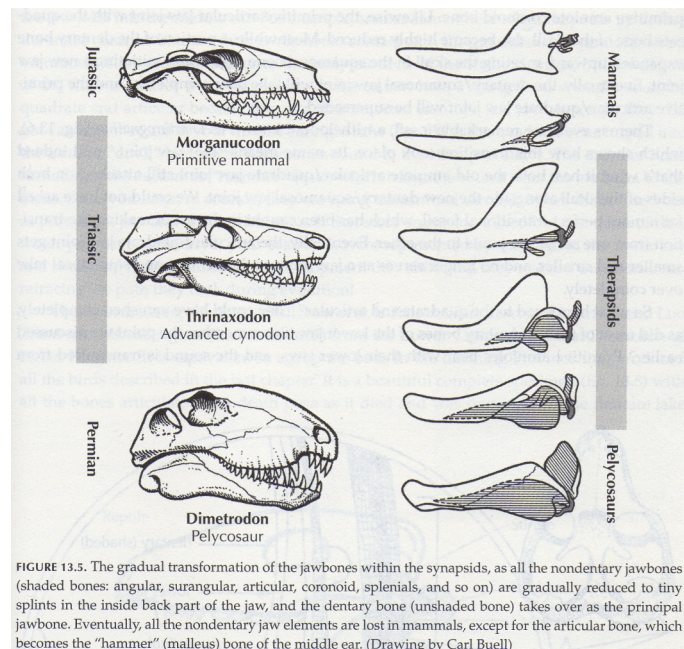


FIGURE 13.5. The gradual transformation of the jawbones within the synapsids, as all the nondentary jawbones (shaded bones: angular, surangular, articular, coronoid, splenials, and so on) are gradually reduced to tiny splints in the inside back part of the jaw, and the dentary bone (unshaded bone) takes over as the principal jawbone. Eventually, all the nondentary jaw elements are lost in mammals, except for the articular bone, which becomes the “hammer” (malleus) bone of the middle ear. (Drawing by Carl Buell)

¹⁷² *Discover*, pp. 64-70, January, 1987.

several bones sutured together to form the complete jaw, the jaw is not as strong as in the mammalian jaw structure.

In mammals the jaw is just the dentary bone, which hinges directly against the skull. The other three bones of the reptile-like structure have migrated into the ear, and now comprise the hammer, anvil and stirrup of the middle ear, which provide a path from the eardrum to the inner ear. Interestingly, in mammalian embryos, a similar migration occurs during the embryo's development.

See Figure 55¹⁷³ for details of the two different jaw/ear structures.

Several early fossil mammals actually display both jaw arrangements side by side, such as *Morganucodon* (~205 Ma) and *Diarthrognathus* (~200 Ma). This arrangement took a very long time to die out. The early Cretaceous *Yanoconodon* (~120 Ma) had a regular mammalian jaw bone, but the middle ear bones still connected to the jaw.

Again see Prothero (2017) chapter 13 for many more details.

This jaw/ear evolution is extremely difficult to explain as the result of a Creator's tinkering over a period of nearly 200 million years. Why would a competent Creator not create the new structure in one go? On the other hand, it is quite plausible in terms of mutations and natural selection, especially in view of the 'tinkering' so evident in the fossil record. And again, the way the bones migrated is more or less duplicated during the embryological development of mammals today.

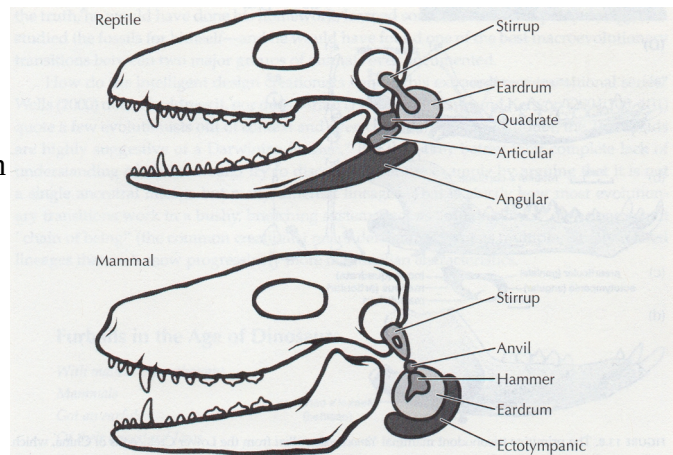


FIGURE 13.7. The ear region also undergoes a dramatic transformation, as the articular bone of the lower jaw hinge and the quadrate bone of the jaw hinge in the skull shift to the middle ear and become the incus and the malleus ("anvil" and "hammer"). This same transformation can be seen not only in fossils but also during the embryology of a mammal. When you were an embryo, your middle ear bones started out in your jaw.

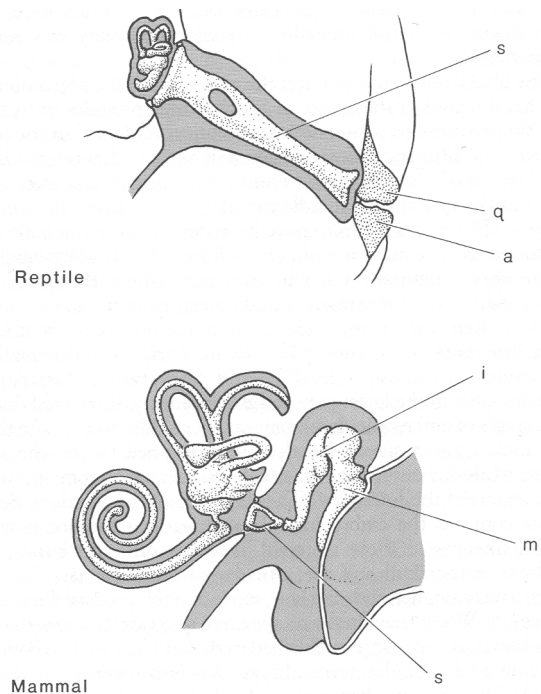


FIGURE 55 Diagram illustrating the transition of bones in the reptilian jaw joint to mammalian bones of the middle ear. Both reptile and mammal have a stapes (s), the "stirrup" of mammals. The quadrate bone (q) of the reptile becomes the incus (i) of the mammal, while the reptilian articular (a) becomes the mammalian malleus (m), also known as the "hammer."

¹⁷³ From Niles Eldredge, *Life Pulse: Episodes from the Story of the Fossil Record*, p. 152.

Diapsid Macroevolution (Dinosaurs and such)

Referring back to Figure 11.1 on page 69, it is seen that in the Pennsylvanian Period at about 315 Ma, Synapsids and Anapsids arose from the main line of amniote evolution. I will not consider the creatures of the Anapsid line. Later the Diapsid line branched off, eventually giving rise to the Ichthyosaurs and Plesiosaurs. Later still the Diapsid line gave rise to the Sauria, which in turn branched off into a line from which appeared Mosasaurs, lizards and snakes. A bit later, just prior to the Great Permian Extinction, the Archosaurs appeared. In the early Triassic Period, in the great post-Permian-extinction radiation, this line gave rise to Crocodylians, Pterosaurs, Dinosaurs, and the Avian dinosaurs we call birds.

Ichthyosaur Macroevolution

Ichthyosaurs were dolphin-like reptiles that, once they appeared at about 250 Ma, evolved into a variety of forms that existed until about 90 Ma.¹⁷⁴

Figure 11.7, from Prothero (2017), page 253, shows a few of the fossils that have been discovered. Note once again the smooth macroevolutionary progression over time from the earliest, most primitive forms to the latest.

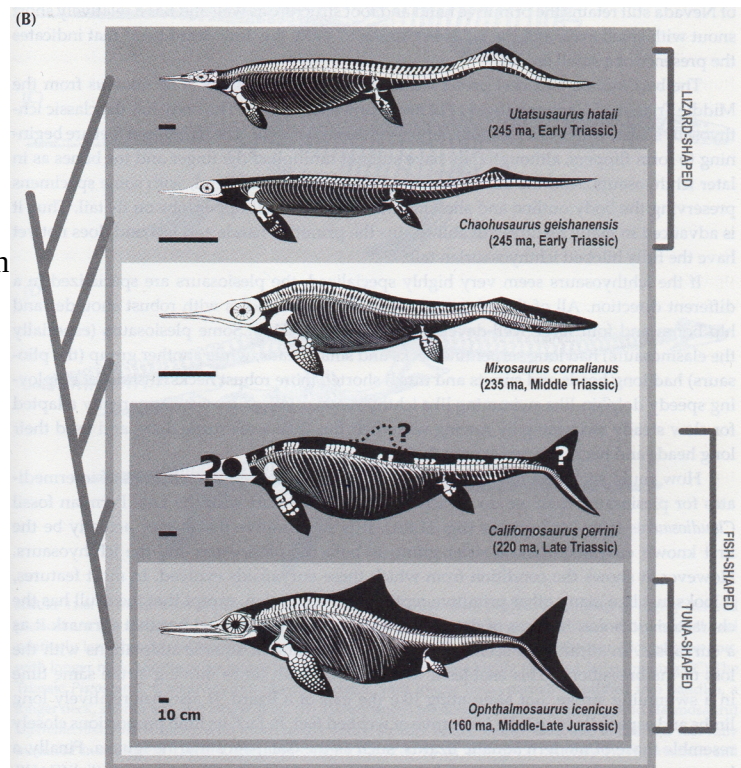


FIGURE 11.7. The ichthyosaurs evolved from lizard-like forms with asymmetric tails (*Utatsusaurus* and *Chaohusaurus*), primitive amniote skulls, and primitive hands and feet, to the highly specialized ichthyosaurs with symmetrical tails, large dorsal fins, big eyes, long fish-catching snouts with conical teeth, and highly modified flippers. (A) A complete articulated skeleton of the very primitive lizard-like ichthyosaur *Chaohusaurus* from the Early Triassic of China. (B) Diagram showing the evolutionary transformations from more primitive to more specialized ichthyosaurs. © Ryosuke Motani, <http://ichthyosaur.org>

¹⁷⁴ <https://en.wikipedia.org/wiki/Ichthyosaur>

Plesiosaur Macroevolution

Early Plesiosaur¹⁷⁵ macroevolution is not well known due to a dearth of definitive fossils. The earliest potential candidate is shown in Figure 11.8 (A), from the very late Permian Period. The earliest undisputed Plesiosaur appeared at about 203 Ma in the late Triassic Period. The line went extinct at 66 Ma in the great Cretaceous-Paleogene (K-Pg or KT (Cretaceous-Tertiary)) extinction.

Note again the smooth transition from early to late forms. The earliest had fully functioning legs rather than flippers. As time progresses, the fossils display longer necks and development of the legs into flippers.

Terrifying, short-necked forms called Pliosaurus¹⁷⁶ appeared over time. Among the largest was *Kronosaurus*,¹⁷⁷ up to 36 feet long. Others were up to 50 feet long.

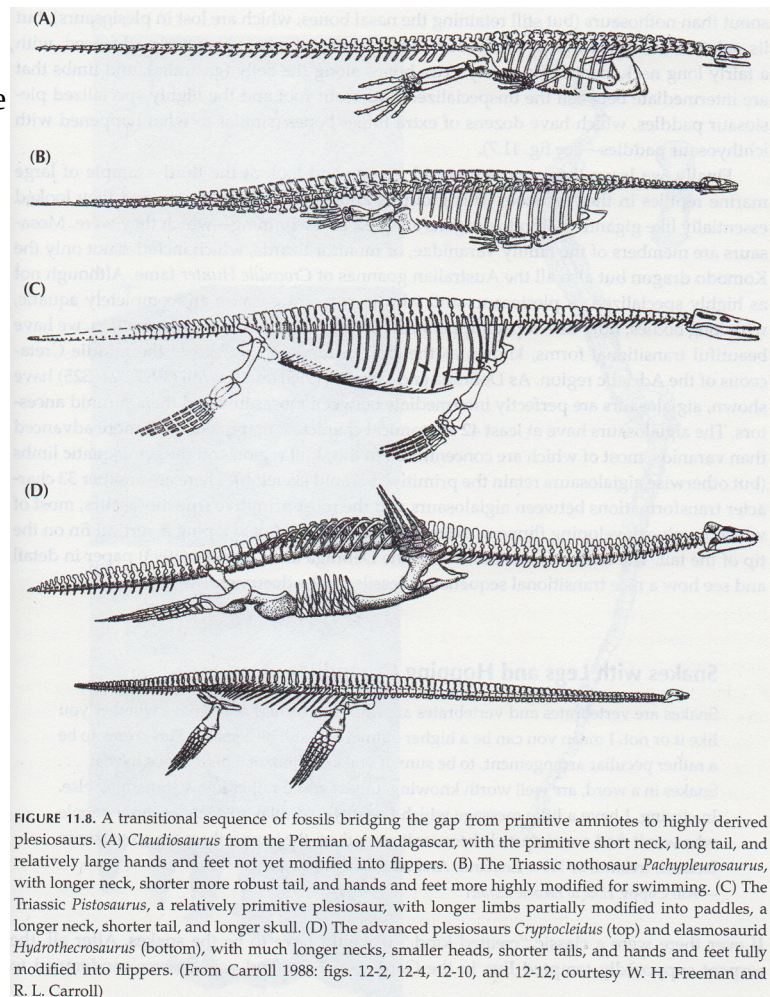


FIGURE 11.8. A transitional sequence of fossils bridging the gap from primitive amniotes to highly derived plesiosaurs. (A) *Claudiosaurus* from the Permian of Madagascar, with the primitive short neck, long tail, and relatively large hands and feet not yet modified into flippers. (B) The Triassic nothosaur *Pachypleurosaurus*, with longer neck, shorter more robust tail, and hands and feet more highly modified for swimming. (C) The Triassic *Pistosaurus*, a relatively primitive plesiosaur, with longer limbs partially modified into paddles, a longer neck, shorter tail, and longer skull. (D) The advanced plesiosaurs *Cryptocleidus* (top) and elasmosaurid *Hydrothecosaurus* (bottom), with much longer necks, smaller heads, shorter tails, and hands and feet fully modified into flippers. (From Carroll 1988: figs. 12-2, 12-4, 12-10, and 12-12; courtesy W. H. Freeman and R. L. Carroll)

¹⁷⁵ <https://en.wikipedia.org/wiki/Plesiosauria>

¹⁷⁶ <https://en.wikipedia.org/wiki/Pliosauroida>

¹⁷⁷ <https://en.wikipedia.org/wiki/Kronosaurus>

Dinosaur Macroevolution

In the Late Permian to Early Triassic Periods there appeared the Archosaurs (“ruling reptiles”), which include crocodylians, pterosaurs, dinosaurs and birds.¹⁷⁸ Refer to Figure 11.1 on page 69 for the timeline.

Branching off the Archosaurs, the first dinosaurish creatures appeared at about 245 Ma in the early Triassic Period, perhaps even a bit earlier as suggested by some footprints. They split into two main lines, the Ornithischians (bird-hips) and the Saurischians (lizard-hips). Through the end of the Triassic at 201 Ma they split into many more lines.

Refer to Figure 1 on the right.¹⁷⁹

The Ornithischians include the duck-bills, dome-heads, Triceratops, Ankylosaurus and Stegosaurus. The Saurischians are split into the Sauropods (long-necked dinos like Brontosaurus and Brachiosaurus) and the Theropods (two-legged, generally meat-eating dinos like Coelophysis, Tyrannosaurus, Allosaurus, Velociraptors, and birds).

Living during the Triassic, Jurassic and Cretaceous Periods, about 251 through 66 million years ago, dinosaurs and their relatives comprised an amazing variety of species.

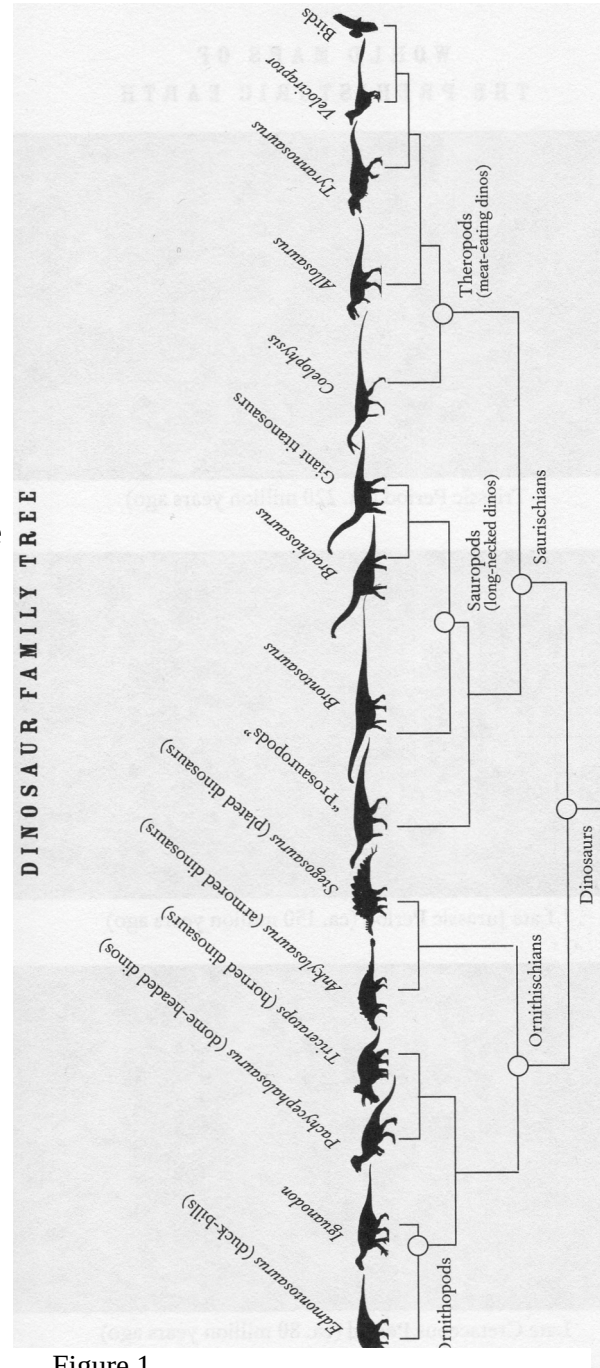


Figure 1.

¹⁷⁸ Prothero (2017), p. 249.

¹⁷⁹ From Stephen Brusatte, *The Rise and Fall of the Dinosaurs*, p. ix.

Transitional Fossils

The above sections present many examples of macroevolution found in the fossil record. Because the fossil record is necessarily spotty, paleontologists use forensic inference to help figure out how species are related through time and form lines of descent. The method might be compared to someone being given a bad game film that has only 1% of the original frames and being asked to figure out the rules of the game. The rules can be determined to a fair degree of accuracy, although not with certainty. Untangling the film of evolution is more difficult because it might be compared to scientists being given a truckload of bits of many films and being asked to figure out the plots of all the films.¹⁸⁰

Sequences of “frames” in the fossil record are shown in many of the illustrations above, such as those shown in the section beginning on page 68. The section below beginning on page 81 shows how genetic evidence, along with fossil evidence, makes lines of descent as certain as anything can be in science.

A more neutral term than “transitional” might be “intermediate”. When shown a mixed-up bunch of frames from a football film, most people have little trouble figuring out a sequence of movements. Given any three frames in a sequence, the frame in between the other two is intermediate in form. Given a sequence in form, it is a good bet that the sequence is also one in time, and therefore the intermediate frame can be called a transitional frame. The same concept applies to figuring out sequences in the fossil record.

The 150 million year old bird-dinosaur *Archaeopteryx*¹⁸¹ is a good example of an intermediate form. Only 12 specimens have been found, from just a wing to nearly complete skeletons. The creature was about the size of a raven, had wings with feathers, teeth in its beak, a long tail, and other features common to both birds and certain small dinosaurs. The skeletons are very much like the small theropod dinosaurs¹⁸² that include dromaeosaurs,¹⁸³ troodontids,¹⁸⁴ *Coelophysis*,¹⁸⁵ and *Compsognathus*.¹⁸⁶ One fragmentary skeleton collected in 1855 was not recognized as such until 1970 because, lacking clear impressions of feathers, it had been identified as a type of pterodactyl. In 2017 its identification was revised.¹⁸⁷

Since about 1990, many theropod or theropod-like fossils have been found that show that the animals had feathers or feather-like structures.¹⁸⁸ They range in age from about 200 million years to the extinction of the non-avian dinosaurs 66 million years ago.

The development of dinosaurs and feathers is a large subject which I will barely touch on here. Suffice it to say that the dinosaurs from which birds developed were so similar to birds that non-specialists are hard put to tell which skeleton is which.

Look at the three reconstructed skeletons below. Can you tell easily what is a dinosaur and what is an *Archaeopteryx*? I certainly can't, at least, not without help from paleontological sources.

¹⁸⁰ See https://www.youtube.com/watch?v=9W005V6OV_E for how this applies to human evolution, and for much information that explains how evolution works, as opposed to the caricatures portrayed in Watch Tower literature.

¹⁸¹ <https://en.wikipedia.org/wiki/Archaeopteryx>

¹⁸² <https://en.wikipedia.org/wiki/Theropoda>

¹⁸³ <https://en.wikipedia.org/wiki/Dromaeosauridae>

¹⁸⁴ <https://en.wikipedia.org/wiki/Troodontidae>

¹⁸⁵ <https://en.wikipedia.org/wiki/Coelophysoidea>

¹⁸⁶ <https://en.wikipedia.org/wiki/Compsognathus>

¹⁸⁷ https://en.wikipedia.org/wiki/Specimens_of_Archaeopteryx#The_Haarlem_specimen

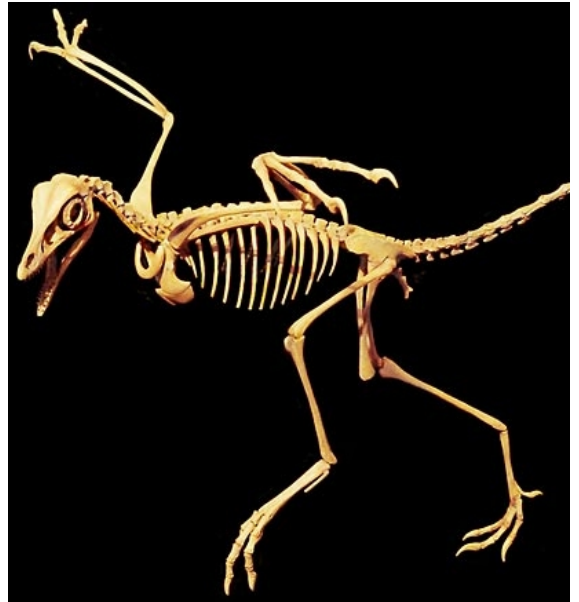
¹⁸⁸ https://en.wikipedia.org/wiki/Feathered_dinosaur

Keep in mind that no paleontologist claims that any of these creatures evolved into another of them, but that they were part of large groups of animals that evolved over time into the many species that have been found, as well as the far larger number that will never be found.

Deinonychus:¹⁸⁹



Archaeopteryx:



Troodontid:¹⁹⁰



¹⁸⁹ <https://en.wikipedia.org/wiki/Deinonychus>

Many people, especially the religious, refuse to accept the fossil and genetic evidence for the existence of transitional forms. When Charles Darwin set forth his theory on the origin of species in 1859, there certainly was a dearth of fossil evidence, and genetics was unknown. Today there is a great deal of evidence on both counts.

For a variety of reasons, many people refuse to accept the fossil and genetic evidence that today we have many examples of transitional forms. A YouTube video discusses the fallacious reasoning and rationalizations used by such people to deny the facts: “Where are the Transitional Fossils?”¹⁹¹

Many books, papers and websites discuss in detail the evidence for macroevolution and transitional fossils. One of the most comprehensive sources is the talkorigins.org website.¹⁹² It has a section dealing with intermediate and transitional forms, and macroevolution.¹⁹³ Plenty of fossil examples are given. The “transitional vertebrate fossils FAQ” presents several hundred examples of transitional fossils.¹⁹⁴ Wikipedia gives another big list.¹⁹⁵ Any internet search engine will turn up thousands of such sources.

Watch Tower writers have always ignored, and continue to ignore, all such evidence. That is willful ignorance, and just plain pig-headedness.

Genetic Evidence for Macroevolution

As shown above, there is much evidence in the fossil record for macroevolution. Discoveries in the genes of living creatures also document the fact of macroevolution. How so? Let’s consider some DNA evidence.

The DNA of every living thing contains “fossils” of ancient DNA. These “fossils” are sequences of DNA that have been found embedded in chromosomes and can be traced back through sequences of creatures that the geological fossil record indicates were in ancestor/descendant relationships. All manner of details of DNA indicate that these sequences developed over time—evolved—during the 3.5 billion years since life first appeared.

For example, the family of proteins called “cytochrome c”¹⁹⁶ plays a crucial role in energy production and transport in the mitochondria¹⁹⁷ inside cells. DNA codes for the sequences of amino acids that form each kind of protein. In general, proteins can have many small differences in their amino acid sequences and still perform their functions. But some proteins, such as cytochrome c, are so finely tuned that very few variations allow the protein to still do its job. Thus, the cytochrome c found in humans and chimpanzees is identical but differs very slightly from that of rhesus monkeys,¹⁹⁸ significantly more from that of horses,¹⁹⁹ and a lot more from that of yeast. Thus, the structure of cytochrome c is highly conserved over evolutionary time. Geneticists have traced back the changes of amino acids molecule by molecule through older and older lineages, and confirmed the evolutionary

¹⁹⁰ <https://en.wikipedia.org/wiki/Troodontidae>

¹⁹¹ <https://www.youtube.com/watch?v=is457IqwL-w>

¹⁹² <http://talkorigins.org/faqs/comdesc/>

¹⁹³ <http://talkorigins.org/faqs/comdesc/section1.html#pred4>

¹⁹⁴ <http://www.talkorigins.org/faqs/faq-transitional.html>

¹⁹⁵ https://en.wikipedia.org/wiki/List_of_transitional_fossils

¹⁹⁶ https://en.wikipedia.org/wiki/Cytochrome_c#:~:text=Cytochrome%20c%20is%20highly%20water,but%20does%20not%20bind%20oxygen.

¹⁹⁷ <https://en.wikipedia.org/wiki/Mitochondrion>

¹⁹⁸ <https://www-personal.umd.umich.edu/~jcthomas/JCTHOMAS/Student%20Papers%201996/A.Aslam.html>

¹⁹⁹ https://en.wikipedia.org/wiki/Cytochrome_c#:~:text=Cytochrome%20c%20is%20highly%20water,but%20does%20not%20bind%20oxygen.

sequences found in the geological fossil record. This genetic record of slow change is extremely strong evidence for macroevolution.

Another example is the way viruses have become incorporated into the genomes of all creatures. Viruses are not living creatures in the normal sense, but can only live and reproduce by being parasites inside cells. Once they get into a cell, they release their genetic material (usually RNA but sometimes DNA) into the cell, which commandeers the cell's reproductive machinery so as to produce more viruses. Occasionally, a piece of the RNA, or the whole thing, gets inserted into a chromosome of the cell the virus is infecting. When this happens, the virus is called a retrovirus.²⁰⁰ They have existed for a very long time.²⁰¹

Every once in a while, a virus particle gets into an egg or sperm cell, and a piece of the RNA gets inserted into a chromosome in that cell. Thus it can be passed on to all of the organism's offspring. When that happens, the virus is called an endogenous retrovirus (ERV).²⁰²

Genetic studies show that on the order of 8% of human genomes consist of endogenous retroviruses. Since the virus genes are foreign, most of them appear to be nonfunctional "junk", especially in the sense of not coding for a functional protein,²⁰³ but over time they can mutate and take on some function. Thus, many such genes have mutated into necessary regulatory genes.

As with cytochrome c, ERVs can provide a genetic history of a line of descent. Because of the extreme unlikelihood of insertion of a chunk of viral RNA into a specific location in the host gene, it is highly likely that when the genomes of two separate species contain an ERV in the same location in a chromosome, they are related as ancestor/descendant or as cousins. And when a line of descent contains many such ERVs, it is virtually certain that all species in that line really are genetically related. Thus, the fact that humans and chimpanzees have something like 98,000 ERVs in common proves that they are descended from a common ancestor, and that the entire line of monkeys and apes have common ancestors. The same goes for other lines of descent. A particularly good YouTube video illustrates the point: <https://www.youtube.com/watch?v=TUxLR9hdorI> .

²⁰⁰ <https://www.google.com/search?q=retrovirus&oq=retrovirus&aqs=chrome.69i59j46j69i59j0l7.3217j0j15&sourceid=chrome&ie=UTF-8>

²⁰¹ <https://www.scientificamerican.com/article/ancient-retroviruses-emerged-half-a-billion-years-ago/>

²⁰² https://en.wikipedia.org/wiki/Endogenous_retrovirus

²⁰³ https://en.wikipedia.org/wiki/Non-coding_DNA

False Conflation of Evolution and Abiogenesis

When dealing with the subject of evolution, Watch Tower writers almost always misrepresent it by conflating the scientific Theory of Evolution²⁰⁴ with the origin of life (abiogenesis²⁰⁵), even though virtually all expositions on evolution by scientists, from Charles Darwin onward, are careful to distinguish between the *Theory* of Evolution (change in populations through time) and various *hypotheses*—which are not *scientific theories*—of abiogenesis. The Theory of Evolution has a great deal of evidence behind it (fossil record, DNA studies, geological timetable), whereas abiogenesis is far more speculative. The two are not two sides of the same coin. As one reference states:²⁰⁶

The origin of life is certainly an interesting topic, but it is not a part of evolutionary theory. The study of the naturalistic origins of life is called abiogenesis. While scientists have not developed a clear explanation of how life might have developed from non-living material, that has no impact on evolution.

Even if life did not begin naturally but was started due to the intervention of some divine power, evolution would still stand on the evidence as our best explanation so far as to how that life developed.

And another:²⁰⁷

Often brought up in the origins debate is how evolution does not explain the origin of life. Let's get something abundantly clear: abiogenesis and evolution are *two completely different things*. The theory of evolution says absolutely nothing about the *origin* of life. It merely describes the processes that take place once life has started.

This improper conflation by Watch Tower writers is demonstrably deliberate, because in a couple of Watch Tower publications the difference is noted.²⁰⁸ But the distinction is almost always ignored, mainly to be able to invoke the logical fallacy known as *The Argument From Personal Incredulity*²⁰⁹ on the conflated notions of “Evolution” and “abiogenesis”. It is far easier to argue before a scientifically ignorant audience that “life could not have originated by chance” than it is to dismiss the mountain of fossil and genetic evidence that life has evolved over some 3.5+ billion years. This conflation is also a good example of the fallacy of equivocation,²¹⁰ where ambiguity in meaning is used to confuse readers.

Let's examine some Watch Tower publications down through the years to see just how badly Watch Tower writers have gotten information wrong and used fallacious reasoning.

²⁰⁴ cf. <https://en.wikipedia.org/wiki/Evolution>

²⁰⁵ cf. <https://en.wikipedia.org/wiki/Abiogenesis>

²⁰⁶ <https://www.thoughtco.com/abiogenesis-and-evolution-249875>

cf. Science of Genesis Paradise Lost - Part 5 Life from Non-Life <https://www.youtube.com/watch?v=ZK4T-hV3hn0&list=PLpdBEstCHhmXRs5GQqgHHPh53S3vRddOd&index=5>

²⁰⁷ <https://rationalwiki.org/wiki/Abiogenesis> cf. <https://www.youtube.com/watch?v=6k1h1bvscJs>

²⁰⁸ cf. *Awake!*, September, 2006, box on page 9: “WHAT IS EVOLUTION? One definition of “evolution” is: “A process of change in a certain direction.” However, the term is used in several ways. For example, it is used to describe big changes in inanimate things—the development of the universe. In addition, the term is used to describe small changes in living things—the way plants and animals adapt to their environment. The word is most commonly used, though, to describe the theory that life arose from inanimate chemicals, formed into self-replicating cells, and slowly developed into more and more complex creatures, with man being the most intelligent of its productions. This third notion is what is meant by the term “evolution” as used in this article.” None of the definitions given describe the scientific Theory of Evolution, but are merely the common ways in which the general word “evolution” is used in most English writing.

²⁰⁹ Also known as “the argument from ignorance”: “ ‘Arguments from personal incredulity’ are a kind of logical fallacy that befalls people of all faiths and positions, and unfortunately are used by Christians and atheists alike. An argument from personal incredulity is a reason to believe something because it is attractive and/or the alternative is difficult to accept.”—<http://stormhighway.com/blog2013/april213a.php> . Also see https://rationalwiki.org/wiki/Argument_from_incredulity

²¹⁰ <https://www.txstate.edu/philosophy/resources/fallacy-definitions/Equivocation.html>

***Awake!* of April 22, 1963**

Everyday Theories Versus Scientific Theories

It is evident in reading the *Awake!* article that its author does not understand the difference between everyday theories and scientific theories.

This “special issue” has the cover title “The Bible Triumphs in a Scientific World”. It sets forth many arguments that the Bible is scientifically accurate in all respects, especially concerning the origin of life. It suffers from a usual problem in Watch Tower literature—that source references are incomplete or nonexistent, such as “one scientist said ...”

The article “**The Origin of Life**” (pp. 4-7) is a classic case of strawman argumentation. It sets up caricatures of science held by few actual scientists and then knocks them down. It uses religiously based views held by some scientists and pretends that these are actually solid scientific views—a classic instance of confirmation bias. Of course, one can always find *some* scientist who holds nonstandard or irrational views. The article clumsily examines certain evidences on the origin of life, and employs “three means used by scientists to determine whether the testimony” supports the claim that “life began by itself” or that Jehovah created all things:

Observation and Logic

Observation is what registers on the senses, from which we can draw logical conclusions. Observation tells us that a vacuum, total emptiness, does not out of itself form material substance... An engineer cannot hopefully sit in his office and wait for the component parts of a skyscraper to assemble themselves.

Examples like this are entirely irrelevant to the question of how atoms and simple molecules might assemble themselves into more complicated molecules. Such microscopic entities obey the laws of quantum mechanics whereas macroscopic objects like skyscraper parts obey laws that do not apply to atoms and molecules. Atoms and molecules in outer space self-assemble into more complicated molecules like amino acids, but not into complicated bulk objects like skyscrapers. They do self-assemble into relatively uncomplicated blobs of matter like planets, stars, and galaxies, but these objects form according to well-understood laws of physics like gravity and those governing intermolecular forces²¹¹. The author has compared apples and oranges, and has committed a fallacy called the fallacy of composition, or a category error.²¹²

To illustrate the subheading “Observation and Logic” the section goes on to invoke *The Argument From Personal Incredulity* by quoting “research chemist E. C. Kornfeld”, writing in the 1958 book *The Evidence of God in an Expanding Universe*²¹³ (of course, no source reference for this book is given), in an article titled “God—Alpha and Omega”:

While laboring among the intricacies and infinitely minute particles of the laboratory, I frequently have been overwhelmed by a sense of the infinite wisdom of God... One is rather amazed that a mechanism of such intricacy could ever function properly at all... How a mechanism ten thousand times more involved and intricate can be conceived of as self-constructed and self-developed is completely beyond me. [p. 176]

The quoted book is a compendium of articles by people with a religious bias, as shown by the complete title *The Evidence of God in an Expanding Universe: Forty American Scientists Declare*

²¹¹ https://en.wikipedia.org/wiki/Intermolecular_force

²¹² https://en.wikipedia.org/wiki/Category_mistake

²¹³ *The Evidence of God in an Expanding Universe*, ed. John Clover Monsma, G. P. Putnam’s Sons, New York, 1958, p. 176

Their Affirmative Views on Religion. The statements of people with such bias should be viewed like a statement from Richard Nixon that politicians never lie.

Kornfeld's bias can be clearly seen in what he wrote in the four pages surrounding what *Awake!* quoted:

It is my firm conviction that there is a God, and that He planned, created, and sustains the universe.—p. 174
When we speak of "God" do we mean by this (1) ... (3) do we define Him as the personal God, revealed through the Jewish nation, who sent His Son, Jesus Christ (by whom He had made the worlds), to be not only Creator but also Redeemer of a lost human race?—pp. 174-175

As a Christian I hold specifically to the third definition presented above. I believe in the God who is revealed and portrayed in the pages of both the Old and New Testaments.—p. 175

... let me tell briefly how the science of organic chemistry influenced and strengthened my abiding belief in God... To one who has seen the marvelous complexity and yet the pervading order in organic chemistry—especially that in living systems—the idea of chance is repugnant in the extreme. The more one studies the science of molecular structure and interreaction, the more one is convinced of the necessity of a planner and designer of it all.—pp. 175-176

Many scientists will probably admit the high probability of some creative intelligence in Nature, and yet the gap between this admission and a definite belief in the Christian God has been bridged by relatively few. It is the conviction of this writer that the bridging of this gap comes about, not by the processes of scientific method, but by the exercising of simple faith. Such faith will reveal God as the "Alpha and Omega," not only of the "plan of salvation," but also of the entire universe. It will reveal Him, in the words of Robert Grant's majestic hymn, as "our Maker, Defender, Redeemer, and Friend."

Christian faith in a God who is both Creator and Redeemer is neither irrational nor subrational, but in a wider sense it is perhaps superrational—above and beyond the confines of man-made logic. Faith in this case must precede reason, for "He that cometh to God must believe that He is, and that He is a rewarder of them that diligently seek Him."—p. 177

In other words, Kornfeld's *a priori* belief in the Christian God influenced his views on chemistry and on everything else in life—a direct admission of confirmation bias and of his reliance on *The Argument From Personal Incredulity*. He directly states that **faith must precede reason in order to believe**, which of course is a thoroughly circular means of achieving both faith and belief. So, contrary to *Awake!*'s claim that Kornfeld's conclusions are a good example of "observation and logic", they are a good example of fallacious conclusions driven by faith—belief without evidence or in the face of contrary evidence.

Awake! continues:

Mathematics

Professor J. Gray, mathematician and scientist, said that all systems move "towards the state of greatest probability." Now, then is it probable that that life originated by chance?

Is it probable that all the atoms of a blob of ink would, by themselves, move in the same direction to form letters and words on a page of paper? ...

Again we see the *Awake!* author committing a category error by comparing the behavior of bulk matter with that of molecules. He goes on to commit two errors in one paragraph:

Another scientist computed the probability of a single protein molecule (one of the molecules essential for life) arising out of chance. As stated in the book *Human Destiny*, it would take 10 to the 243d power [1 followed by 243 zeros] billions of years for this to happen! ...

The first error is that no reference is given about the book *Human Destiny*. It was actually written in 1947 by French scientist Pierre Lecomte du Noüy, who the Watch Tower Society has quoted in other

older publications. But neither du Noüy in 1947, nor any scientist today, has any valid means of calculating the probability of a protein molecule forming “out of chance”. Anyone who claims to have done such a feat is pulling numbers out of his nether regions.

Principles of Nature

A third line of scientific evidence is that provided by the established principles or laws of nature. Four of these are: (1) Inertia; (2) Equilibrium; (3) Conservation of mass-energy; (4) Biogenesis.

That all sounds good, but the author proves to have virtually no understanding of these principles.

A dictionary defines “inertia” as the “tendency of all objects and matter in the universe to stay still if still, or if moving, to go on moving in the same direction unless acted on by some outside force.” A ball will not pick itself off the ground and throw itself to the catcher... Inanimate matter, devoid of motion, energy and life to begin with, would have stayed that way forever unless acted on by an outside force. It would have had no reason to begin forming into a universe and then into life. This would be contrary to the law of inertia. The only way it would have overcome this inertia would have been for an outside source of energy to begin operating on it.

The author is again mixing apples and oranges, but this time by using the same old bad argument against the “chance origin of life” and the formation of the universe. The two are simply not comparable. He again makes the category error of equating the behavior of bulk matter with that of atomic-scale matter. Inertia is essentially a manifestation of gravity; this is a fundamental part of Einstein’s General Theory of Relativity. The force of gravity is some 10^{36} times weaker than the electromagnetic force at the scale of atoms,²¹⁴ so inertia has virtually no effect on molecular interactions, and the author’s point is simply wrong. Atoms and molecules interact mainly via the electromagnetic force, not gravity, whereas matter on the scale where inertia is significant interacts mostly via gravity.²¹⁵

Another principle is that of “equilibrium,” also called “entropy” or the “second law of thermodynamics.”

The author’s statements on this topic are so off base that it is not worth commenting further.²¹⁶ But see the next main section for more on entropy.

The third principle, the “conservation of mass-energy,” is the discovery by scientists that they cannot actually destroy or create anything, but merely change things into some other form of matter or into energy... [Energy] could not have come from nothing. If it cannot be reduced to nothing, then it could not have come from nothing. It had to originate with a source of always-existing energy, which source is God.

The topic at hand is the origin of life, not the origin of mass-energy. The author is again grasping at straws.

Of the fourth principle, “biogenesis,” ... [it] tells us that there is nothing living on earth, animal or vegetable, that did not receive its life from previous life, from a superior, mature parent. Since this law of biogenesis states that life proceeds only from preexisting life, there must have been a preexisting life that started all life. This eternal source of life ... is God.

Again we find false arguments. First, there is no such “law of biogenesis”. Rather, people have observed, in careful experiments, that life does not *normally* arise from inanimate matter. While people often call such a general observation a “law”, it is not a law in the sense of an ironclad behest that cannot be broken. People might describe “the law of gravity” as “what goes up must come down”, but the fact that the Voyager spacecraft are on their way out of the solar system proves that this “law” is

²¹⁴ https://en.wikipedia.org/wiki/Fundamental_interaction

²¹⁵ Discounting such pathological objects as black holes and neutron stars.

²¹⁶ cf. <https://ncse.com/cej/2/2/creationist-misunderstanding-misrepresentation-misuse-second>

merely a generalization of everyday experience. Second, if it is an ironclad law that “life proceeds only from preexisting life”, then whence came God? It is pure special pleading to claim that the Christian God is an exception to the rule. Third, even if some higher life form created earthly life, who is to say that it was the Christian God rather than the Muslim Allah, or the Hindu creator god Brahma, or some powerful space aliens? The author is entirely unaware of such complications.

That the *Awake!* author is unaware of how false and specious his arguments are is proved by his conclusion:

When put to the test of scientific evidence, the Bible emerges triumphant on the question of the origin of life!

The next *Awake!* article, “**The Origin of Man**” (pp. 8-11) continues the theme of specious argumentation. Contrasting the Bible’s statement that God created man with Darwin’s statements that life evolved from one or a few original forms, the author writes:

Here again, there is no middle ground. Either the Bible is correct or the evolutionist is correct. Either God made man as a special creation or he created an elementary form of life from which man evolved.

This claim is specious because it is an example of the fallacy called the false dichotomy, where “the arguer sets up the situation so it looks like there are only two choices. The arguer then eliminates one of the choices, so it seems that we are left with only one option: the one the arguer wanted us to pick in the first place. But often there are really many different options, not just two—and if we thought about them all, we might not be so quick to pick the one the arguer recommends.”²¹⁷ There are a variety of other choices here. Perhaps God used a form of evolution to create man. After all, the Watch Tower Society has used a similar argument to reconcile the Bible’s statements that both God and Jesus Christ were the creators of the universe: God was the author and Jesus, in his prehuman existence, was his workman. Similarly, God would be the creator of man and evolution would be his method of creating. This is one form of “theistic evolution”. Or perhaps the Hindu creator god Brahma created man. Another choice might be that space aliens engineered various forms of life and man over millions of years, ending with the present form—perhaps even Adam and Eve.

The article goes on to quote sources back to 1859 about the dearth of fossil evidence for the evolution of man, many of which are hopelessly out of date today, and were so in 1963. Today there exists far more fossil evidence for the history of mankind going back more than two million years.²¹⁸

The article attempts to argue that “languages and writing” somehow prove the Watch Tower Society’s version of the Bible’s history of man. But the attempt is hopelessly incoherent. For example, it tries to argue that the fact that even “the most primitive savages” do not communicate in grunts or growls indicates that languages did not evolve. It quotes outdated material to the effect that modern languages tend to be degenerated forms of older languages—ignoring the fact that even in 1963 language scholars knew that a huge variety of modern languages had evolved from Proto-Indo-European, from which we have languages such as Latin, Greek, Persian, Hindi, etc. Some of the quoted sources are problematic as well, obviously being biased toward biblical apologetics rather than being objective. For example, the article states (p. 11):

Archaeologist J. P. Free states: “We see no reason for doubting the Biblical indication concerning the original unity of language, or the implication that mankind had speech from the beginning. No discovery, ancient or modern, has shown otherwise.”—*Archaeology and Bible History*.

²¹⁷ <https://writingcenter.unc.edu/tips-and-tools/fallacies/>

²¹⁸ cf. https://en.wikipedia.org/wiki/Human_evolution

J. P. Free was not just an archaeologist, but a professor at the evangelical Wheaton College, a Christian college whose graduates include Billy Graham. A for-sale description of Free's book states:²¹⁹

Joseph P. Free's *Archaeology and Bible History*, first published in 1950, served well an entire generation of pastors, Sunday school teachers, laypersons, and college students by summarizing the history of the Bible and shedding light on biblical events through archaeological discoveries. The author demonstrated how such data helps us understand the Bible and confirm its historical accuracy. At times he also dealt with issues of biblical interpretation and criticism, always from a historically orthodox position.

A little thought shows that Free's claim about "the original unity of language" is nonsense from the biblical perspective. After all, the Genesis story of the tower of Babel states that some time after Noah's Flood mankind's languages were divinely confused—these languages were not derived from Noah's original. It's astonishing that the *Awake!* author failed to notice this. Indeed, he goes on with his nonsense in the next paragraph:

Professor C. Laird, in *The Miracle of Language*, says: "All languages appear to have descended from one universal parent language." Says the *New York Journal-American* of August 11, 1962: "At one time, man probably did speak only one language. Scholars can trace practically all the languages spoken on earth today back to an ancestor language. In time, however, this one language broke up into several groups, each of which is a 'family' of languages." It is just as the Bible relates at Genesis 11:1: "Now all the earth continued to be of one language and of one set of words." Then came the confusion of tongues, which science has corroborated.

Really? Scholars can *really* trace practically all modern languages back to a single ancestor language? Even though some 4,400 years ago all but one language originated by divine fiat when God created a bunch of new ones to create confusion? This *Awake!* author is either supremely stupid, or so contemptuous of his readers' intelligence that he thinks they won't notice the ridiculously illogical and unscriptural argument he makes.

Is this blatant nonsense really "spiritual food in due season" from God?

The next *Awake!* article, "**Place of Man's Origin**", (pp. 12-15) argues that the earliest recorded civilization was in "the land between the rivers" Tigris and Euphrates—Mesopotamia—and that the earliest writing came from there, and that this is in line with Genesis' statements about the garden of Eden: "There is evidence in early post-Flood writings to indicate that Eden was near the headwaters of the Tigris and Euphrates." The author indicates that the Sumerians produced these writings.

The problem here is that the author ignores what his own colleagues in Writing—including he himself—were teaching at that time about Noah's Flood. According to Watch Tower teaching, the Flood caused huge changes to the earth, on land and in the oceans. For example, the August 22, 1958 *Awake!* stated (p. 4):

As the Bible states, the Flood destroyed not only humans but untold millions of animals. It mixed animals of many kinds with clay, gravel and some sea life. Great numbers of fish also perished by being entombed in sediment stirred up by the powerful currents of the Flood. Fossilized fish have been found that show clear evidence of having been buried alive.

Those same currents smashed great rock formations and scattered huge boulders from those formations over great distances, mixing them with bones, shells and vegetation. They scooped out from the ocean floors, as well as from land surfaces, enormous canyons that remain until this day.

The June 22, 1963 *Awake!* argued that Noah's Flood did a huge amount of reshaping of the earth's surface due to massive currents of water (pp. 10-11):

²¹⁹ Found when searching for the book at <http://www.addall.com/used/>

Power of Water in Violent Motion

Great driving waves of water in violent motion, on the other hand, are the most feasible force of nature that could crush and strew abroad tremendous rock formations. Racing as an uncontrolled flood, water levels cities in moments...

Such power could explain the widespread phenomenon of the “drift,” and yet these were merely local, small floods of short duration. But the great flood of Noah’s day is something else; it was a global flood. Concerning that God-sent Flood, the Bible record says: “The waters overwhelmed the earth so greatly that all the tall mountains that were under the whole heavens came to be covered.” (Gen. 7:19) That flood was gathering depth and momentum, not for a few hours, but for forty violent days! Imagine whole continents of water thick with sediment as they surged about angrily, smashing mighty boulders together. What colossal awls and mighty chisels all this would prove to be! Here was a power that could dig deep valleys and canyons.

That Flood was a miraculous act of Jehovah God, of whom it is written: “He has founded the earth upon its established places... The waters were standing above the very mountains. At your rebuke they began to flee; at the sound of your thunder they were sent running in panic—mountains proceeded to ascend, valley plains proceeded to descend—to the place that you have founded for them.”—Ps. 104:5-8.

Obviously, if this Flood scenario were correct, *Awake!*’s author could not rationally argue that the location of the Garden of Eden could be known to anyone after that Flood, or even that *any* post-Flood geographical features in Mesopotamia existed before the Flood—not even the Tigris and Euphrates rivers. If the mountains around Mesopotamia “ascended” during the Flood, and the huge valley of Mesopotamia itself “descended” during the Flood, then all of Mesopotamia’s geographical features were brand new.

Yet again we find that *Awake!*’s author is either grossly stupid, or supremely contemptuous of his readers’ intelligence. Either way, his claims are laughably inaccurate.

The next *Awake!* article in the April 22, 1963 issue, “**Time of Man’s Origin**”, (pp. 16-18) is another tour-de-force of irrational argumentation. The Watch Tower Society dates Noah’s Flood to 2370 BCE, so that no records of any kind of any civilization ought to be found earlier than that. Yet the author writes:

No Record Before About 4,000 B.C.!

When we examine the actual records of ancient men and civilizations, their history, writing, astronomy, mathematics, agriculture and other facets of life, it is of extreme interest to note that there are no records before about 4,000 B.C.!

If the author’s “4,000 B.C.” figure is correct, that pretty well clobbers the Watch Tower Society’s date of 2370 BCE for Noah’s Flood. Apparently this author thinks that his audience of JWs cannot do simple arithmetic.

The article next quotes several secular authors who observe that “recorded history” goes back to between about 3000 and 4000 BCE. The author emphasizes his point:

Man has been on earth since about 4,000 B.C., which is why his writings are found only from that time forward.

If that is true, then how is it that we have no writings from before Noah’s Flood? All post-Flood writings should date to later than 2370 BCE, according to Watch Tower chronology.

The fact is that the oldest written material, according to modern archaeology, dates to between about 3500 BCE and 3000 BCE.²²⁰ *Awake!*'s author quotes several secular writers to this effect, so the date was already known in 1963. Since Sumerian writing obviously must be post-Flood, it has nothing to do with any conjectured pre-Flood writing going back to Adam. How can *Awake!*'s author be so ignorant?

The above material only deals with *written* archaeological material. There exists a great deal of *non-written* material that goes back, more or less continuously, tens to hundreds of thousands of years,²²¹ and a lesser amount going back several million years. We will look at some of this material later in this paper.

Awake!'s author airily dismisses all this evidence with another false and grossly misleading claim:

It is dishonest for men to guess man's age as being millions of years and pass this off as fact. Claims that devices such as the radiocarbon clock show much older dates are not valid. Beyond a few thousand years, no method of dating objects by such means is accurate.

Dating methods are much more accurate today than they were in 1963, although even at that time they were reasonably accurate. Radiocarbon dating, now known to be invalid for dates much over 40,000 years, has been carefully calibrated against other "clocks" such as tree-ring dating, counting lake varves (annual layers in lake-bottom deposits), counting ice-core layers from Greenland and Antarctica, counting growth layers in coral, etc.²²² Dozens of other forms of archaeological dating have been developed;²²³ they give a pretty consistent picture of the time scale of mankind's history—one that is not the Watch Tower Society's version of biblical chronology.

In the November, 2017 JW Broadcasting video, David Splane said (1:42): "This month I'd like to talk about the efforts Jehovah's organization is making to produce literature, publications, articles, that are as accurate as possible. We're going to talk about accuracy, accuracy of statement." In view of the above—and a lot more that could have been said—what opinion do you Governing Body members now have of the author of the above *Awake!* articles? Was he accurate in his quoting? In his statements? Did he make good, valid arguments?

No, he did not. His quoting practices and his argumentation were atrocious. Any normal magazine author would be fired for those blatant violations of scholastic norms.

Let's move on to the next example.

²²⁰ <https://en.wikipedia.org/wiki/Sumer>

https://d1wqtxts1xzle7.cloudfront.net/57939360/oimp32_-_Visible_Language.pdf?1544120939=&response-content-disposition=inline%3B+filename%3DGlossary_of_Linguistic_Terms.pdf&Expires=1624566476&Signature=Vq50YMzncnqBh407E99hCKANOyzWU6MHXPvdiXwA4Dulyqa3smFvzki206y6DggoLj-K9mJALamWabKhX94J1qamvvMsiJb0ud3wMTuvi71yD23~4-n2F7osgsLjrkJ2MqlHT12v-lnNo9ODD1DLVlgdcvnYHwRq5DD8oLtcDr3DGSmc6YPffB2vXwWBieL7tfY2eGVKnqCVQa4jia8L8VgYIX7auu1h5RwPHkOU70cdFDKsP48xTXZ2QaIV1iRXflbL0o78rI8PpbM1ZVnLp2oWnzpFpe1FwA49uK8-Rzbu8ENUhSXwnyQrJinonCw2rjGkW3JnshliKsMLRmmTw_&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA#page=33

²²¹ cf. Steven Mithen, *After the Ice: A Global Human History, 20,000-5000 BC*.

²²² https://en.wikipedia.org/wiki/Radiocarbon_dating

²²³ https://en.wikipedia.org/wiki/Dating_methodologies_in_archaeology

Book *Did Man Get Here by Evolution or by Creation?* 1967

This was the Society's first book-length treatment of the Theory of Evolution. Earlier treatments relied mainly on *The Argument From Personal Incredulity*²²⁴ or simply declared, with little or no evidence, "science is wrong". While the book contains references to non-JW literature, many of these are obviously quote-mined²²⁵ and do not fairly represent the author's overall point of view. The overall style of argument continues with *The Argument From Personal Incredulity*: "Life is so complicated! It *couldn't* have evolved!" Furthermore, the *Evolution* book contains many false or misleading arguments.

False Conflation of Evolution and Abiogenesis

The book uses the standard Watch Tower practice of dishonestly conflating evolution and abiogenesis, setting the pattern for later Watch Tower books. Chapter 3, "Does Life Come from Nonliving Matter?" begins with this falsehood:²²⁶

Evolution asserts that the first speck of life on earth arose from inanimate matter.

No references are given, just as more recent Watch Tower publications give no scientific references for that assertion. But as we have seen, "evolution" asserts no such thing, since abiogenesis is not a part of the Theory of Evolution. Only the usual creationist caricature of evolution so asserts.

The book is full of false arguments that well illustrate what author Alan Rogerson stated (quoted above):

A long acquaintance with the literature of the Witnesses leads one to the conclusion that they live in the intellectual 'twilight zone.' That is, most of their members, even their leaders, are not well educated and not very intelligent. Whenever their literature strays onto the fields of philosophy, academic theology, science or any severe mental discipline their ideas at best mirror popular misconceptions, at worst they are completely nonsensical.

The book goes on to give an argument that is nonsensical and reflects popular misconceptions:

Is there any trend toward evolution among the elements on earth? No, for atoms are generally found to be either stable or, in the case of some, in a decaying trend until they turn into an element that is stable.

This fact harmonizes with the scientific principle called "entropy." This essentially means that there is a tendency from the highly organized *downward* toward the less organized. Never is there an increase of order without an outside force.

This argument is wrong and misleading on several counts. First, entropy has nothing to do with radioactive decay or the "decaying trend of atoms". In radioactive decay the nucleus of an atom randomly emits particles and energy, and transforms into a different element. Entropy, by definition, has to do with the arrangement of atoms *in bulk*, and has nothing to do with the internal behavior of individual atoms.²²⁷

Second, in 1946 cosmologist Fred Hoyle published a paper laying the groundwork for the process of nucleosynthesis, i.e., the creation of new elements in stars. Since then the process has been laid out in great detail. In a very real way, we are stardust. Once these elements are created, they remain stable, except for the radioactive ones.

²²⁴ cf. *The Watchtower*, October 1, 1964, "The Bible and Creation in the Light of Modern Science", pp. 586-588.

²²⁵ cf. https://rationalwiki.org/wiki/Quote_mining

²²⁶ *Did Man Get Here by Evolution or by Creation?*, Watch Tower Bible & Tract Society of Pennsylvania, 1967, p. 23

²²⁷ https://www.physics.ohio-state.edu/p670/textbook/Chap_6.pdf <https://www.youtube.com/watch?v=b7iuFIKmkN4>

Third, in the physical universe we certainly *do* observe *local* decreases in entropy under many circumstances. While the paragraph is correct that there is a *tendency* for matter to become less organized, that does not mean that matter will *always* become less organized. Furthermore, the author appears to be unaware that organization does not equal entropy.²²⁸ This misconception is an example of the popular misconceptions that so characterize Watch Tower ‘science’.

While entropy is often said to be related to order, what is meant depends on the author’s notion of what constitutes ‘order’. Entropy is actually a measure of the concentration of useful energy, not necessarily of order. A hot object contains more useful energy than a cold object, and therefore has lower entropy than the same object when it has become colder. But the atoms in the hot object are bouncing around more and faster than those in the cold object, so the hot object is more disordered than the cold object. A cold object at a temperature near absolute zero is highly ordered but has high entropy because it contains little useful energy.

The problem with peoples’ popular misconceptions about entropy and order is that they fail to consider the *entire* system of which an object is a part. The statement that “entropy always decreases” applies only to *closed systems*, i.e., only to systems that have no input or output of energy. That is one way that the Watch Tower author’s argument is wrong, because he applies the concept of entropy of the entire system to one of the objects inside it, e.g., to a single molecule in the open system of the earth. When individual atoms gain energy from outside the system, they can form more complex molecules, molecules which have lower entropy. This is what occurred in the famous Miller-Urey experiments of the 1950s, where simple gases were subjected to energetic electrical discharges in a closed system of glass enclosures and formed complex amino acids.

We also have the example of photosynthesis, where chlorophyll molecules in plants capture energy from the sun and transform simpler molecules into more complex molecules, such as sugars, that have lower entropy—more energy in a useful form. That energy is used by other organisms to power their own biological processes when the entropy of the sugar molecules increases as they are broken down into simpler molecules. It is a matter of definition as to whether the sugar molecules are more or less organized than the simpler molecules they are formed from or broken down into. In this case the notion of “order” is not useful.

Given the above facts, the author’s invocation of entropy and order to argue against abiogenesis is completely wrongheaded.

The book continues:

To illustrate: will the elements of earth, left to themselves, ever produce an automobile, or even a simple gear? To the contrary, the elements remain as they are. When they are fashioned into a machine by man, even the machine, when left to itself, begins to decay.

This argument illustrates a type of fallacy called the fallacy of composition, or a category error.²²⁹ Matter on the atomic level follows the rules of quantum mechanics and behaves quite differently from bulk matter, as shown above in the discussion of the 1963 *Awake!* article. Many kinds of atoms are attracted to other atoms by forces weak and strong. When the kinds and conditions are right, they organize themselves and form molecules such as amino acids. Such molecules are found in deep space, and were formed when the right atoms came together and were acted upon by outside energy such as electromagnetic radiation and cosmic rays. Matter in bulk follows the everyday rules we are all familiar

²²⁸ cf. <https://en.wikipedia.org/wiki/Entropy>

²²⁹ https://en.wikipedia.org/wiki/Category_mistake

with, but matter on the atomic scale often does not. Equating the behavior of tiny atoms and molecules to that of bulk matter is a gross category mistake.

The *Evolution* book continues its category mistake (p. 26) and again repeats the falsehood that abiogenesis is a part of evolution:

So the facts reveal no upward evolving of the elements on earth, either into more complex elements or into organic compounds. But for evolution to have taken place, the inanimate elements would have had to evolve, and not just into another element or organic compound either, but into something far, far more complicated. They would have had to evolve into a living cell.

And again (p. 31):

The theory of the evolution of a living cell from nonliving matter is really just a refined version of the older theory of spontaneous generation.

False Claim That the Precambrian Fossil Record Is Blank, Devoid of Life

Chapter 4, “What Does the Fossil Record Show?”, begins by giving the impression that no life whatsoever existed before the Cambrian Period, which it mentions (p. 42) “is said, by evolutionists, to be about 600,000,000 years old”. The book quotes Charles Darwin’s *The Origin of Species* (p. 41) to the effect that there ought to exist “vast piles of strata rich in fossils beneath the Cambrian system”, but that such rich fossiliferous strata do not exist. Of course, in 1859 the fossil record of life was virtually blank, because compared with today it had been barely studied. But by 1967 paleontologists had discovered microscopic life going back at least 3.5 billion years²³⁰ and multicelled life going back 600-1000 million years, and found that the so-called Cambrian Explosion was actually a period of time anywhere from about 5 to 50 million years long.

Much has been written in the last six decades about scientists’ improving understanding of the Cambrian Period²³¹ and of the preceding Ediacaran Period.²³² Today it is understood that the Ediacaran Period lasted from roughly 630 to 541 million years ago, and the Cambrian Period lasted from about 541 to 485 million years ago.²³³ During the Ediacaran all sorts of soft-bodied life forms appeared, which mostly went extinct at the beginning of the Cambrian for poorly understood reasons. Some of these forms appear to be the precursors of Cambrian life, which again for poorly known reasons began proliferating, first into a variety of small creatures that often had bits of shelly material (these are often termed the Small Shelly Fossils), and then into a great variety of creatures with well developed shells. The greatest proliferation of life forms occurred during the Middle Cambrian over about 20-30 million years. Trilobites appeared for the first time. So calling this an “explosion” is valid only in the sense that 20-30 million years is a small fraction of the 3.5+ billion year history of life on earth.²³⁴ In the history of an individual species, that is a very long time. As paleontologist Donald Prothero has remarked, it was more of a “slow fuse” than an explosion.²³⁵

So multicelled life existed long before the Cambrian Period in the Ediacaran Period of about 630 to 541 million years ago, and possibly even further back. Fossils from this period are invariably soft-bodied plants and animals, thus explaining their lack of preservation, and have been found in areas such

²³⁰ cf. <https://en.wikipedia.org/wiki/Stromatolite>

²³¹ cf. Douglas Erwin and James Valentine, *The Cambrian Explosion: The Construction of Animal Biodiversity*.

²³² <https://en.wikipedia.org/wiki/Ediacaran>

²³³ <https://en.wikipedia.org/wiki/Cambrian>

²³⁴ <https://www.youtube.com/watch?v=6ehv1DVQxv0>

²³⁵ Donald Prothero, *Evolution: What the Fossils Say and Why It Matters*, 2nd ed., ch. 7.

as Australia, Siberia, Namibia, China and Canada. Far clearer traces of life, such as tracks and burrow-like structures, have been found from this Period. So Darwin's expectation that the Precambrian record of life would be filled in has been fulfilled.²³⁶ While the period is mostly holes, it is far from blank.

On page 42 the *Evolution* book deliberately misquotes a source reference. It states:

In Darwin's day the fossil record of the pre-Cambrian layers was a blank. Now, after more than a hundred years of intensive investigation, what do the facts show? The *New York Times* of October 25, 1964, in an article supporting evolution, admits that that period is still a blank:

"The chief puzzle in the record of life's history on earth: the sudden appearance, some 600 million years ago, of most basic divisions of the plant and animal kingdoms. There is virtually no record of how these divisions came about. Thus the entire first part of evolutionary history is missing."⁶⁴ [*The New York Times*, October 25, 1964, p. 8E.]

So the *Evolution* book's author wants to justify his claim that the fossil record of the Precambrian layers is and has always been blank with a quote that merely says that the first part of *evolutionary history* is missing—not that the entire first part of the *fossil record* is blank. The *Times* article does not state or imply that the fossil record contains nothing at all—that it's blank—but that it contains too little information to understand how the most basic divisions of the plant and animal kingdoms came about. A more complete quotation bears this out:²³⁷

A radically new concept of evolution is being discussed in scientific circles. As presented by two Texans, it would explain the chief puzzle in the record of life's history on earth: the sudden appearance, some 600 million years ago, of most basic divisions of the plant and animal kingdoms.

There is virtually no record of how these divisions came about. Thus the entire first part of evolutionary history is missing.

The theory says that evolution of a large proportion of the diverse species that have inhabited the earth—plants, fish, trees, and so forth—took place in two gigantic "revolutions" of comparatively short duration.

Each was brought about, according to the hypothesis, by an increase in the oxygen content of the air. The oxygen, particularly in its three atom form, ozone, cut off lethal wave-lengths of ultraviolet light from the sun.

The growth of atmospheric oxygen, in the view of many scientists, was a product of life itself—the process known as photosynthesis. Plants, in this process, use carbon dioxide from the atmosphere to manufacture carbon compounds, then release the leftover oxygen.

The *Times* author goes on to mention the oldest fossil evidence of life as being two or three billion years old:

This [ultraviolet-rich] light not only penetrated the original air, but even pierced the top 15 to 30 feet of the oceans.

Since oceanic water circulates, any drifting life would have been carried into the layer bathed in ultra violet. Hence it seems unlikely to Drs. Berkner and Marshall that life could have originated in the oceans. Instead they believe it probably sprang forth independently on the bottoms of numerous deep pools, possibly warmed by the volcanic activity widespread at that time.

Thus **for most of the earth's history, life, in the form of primitive algae, fungi and bacteria**, had little more than a toehold in these pools. **The oldest fossil evidence of such algae dates back two or three billion years**, yet diverse, large scale life forms did not appear in the fossil record until some 600 million years ago.

It is this sudden appearance of diverse life that has puzzled scientists. The assumption has been that the earlier record was destroyed or that previous life forms did not have shells or skeletons hard enough to leave a record. Yet soft plants and animals also leave their prints in the sands of time and they, too, were absent.

²³⁶ <http://www.ucmp.berkeley.edu/vendian/ediacaran.php>

²³⁷ <https://www.nytimes.com/1964/10/25/archives/the-week-in-science-evolution-a-new-concept.html>

So the *Evolution* book's author tries deliberately to deceive the reader into thinking that a *New York Times* article justifies his claim that the Precambrian fossil record is blank by leaving out the specific statements in the article that the fossil record was most certainly **not blank**. Rather, it contained "primitive algae, fungi and bacteria" dating back "two or three billion years".

Now contrast the *Evolution* book's author's lies with Governing Body member David Splane's claim that "we would never deliberately distort a quotation. We try very hard to use all of our quotations in context." Splane is either grossly ignorant of his organization's historical practices, or is himself lying.

On page 42 the *Evolution* book continues its false theme that the Precambrian fossil record is blank. It quotes a *Scientific American* magazine article in support.²³⁸ The book omits crucial parts of the article with ellipses (...). In my quotation below, the omitted portions are in **sans-serif type**. Note that the occurrence of the "Infra-Cambrian ice age" has been fairly well confirmed²³⁹ in the years since the *Evolution* book was published (1967). Also note that in 1967 the Watch Tower Society was teaching a branch of young-earth creationism known as "Flood Geology".²⁴⁰ *Scientific American* stated:

If our interpretation of the Infra-Cambrian ice age is correct, at least in broad outline, it can hardly be mere coincidence that a geological event of such intensity was followed, after a relatively short interval, by a biological event of equally striking character. Both the sudden appearance and the remarkable composition of the animal life characteristic of Cambrian times are sometimes explained away or overlooked by biologists. Yet recent paleontological research has made the puzzle of this sudden proliferation of living organisms increasingly difficult for anyone to evade.

In contrast to the burgeoning of animal life in the Cambrian period, the only kind of life for which Pre-Cambrian rock strata (including those of Infra-Cambrian age) provide clear evidence is plant life, chiefly lime-secreting algae. The strata of Cambrian age, however, contain the fossils of a remarkably varied array of multicellular animals. These animals were neither primitive nor generalized in anatomy: they were complex organisms that clearly belonged to the various distinct phyla, or major groups of animals, now classified as metazoan [see illustration above]. In fact, they are now known to include representatives of nearly every major phylum that possessed skeletal structures capable of fossilization; the only important exception is the phylum of chordates, which includes the vertebrates.

Moreover, most of these phyla first appear in the fossil record during the early part of the Cambrian period, the 40-million-year Lower Cambrian. Their record extends more or less unbroken from then up to the present day. Yet before the Lower Cambrian there is scarcely a trace of them. The appearance of the Lower Cambrian fauna is thus a uniquely important event in the history of animal life. Moreover, on the time scale of the fossil record as a whole the emergence of the fauna can reasonably be called a "sudden" event [see illustration all page 34].

²³⁸ "The Great Infra-Cambrian Ice Age", *Scientific American*, August, 1964, pp. 34-36.

²³⁹ cf. https://en.wikipedia.org/wiki/Snowball_Earth

²⁴⁰ cf. https://en.wikipedia.org/wiki/Flood_geology "Flood Geology" had its modern beginning in the early 20th century in the writings of the Seventh-Day Adventist and young-earth creationist George McCready Price. Up through 1965 one can detect echos of Price's ideas in WTS writings dealing with various creation related topics. In 1961 the young-earth creationists Henry Morris and John Whitcomb published the book *The Genesis Flood*, which expanded on Price's ideas and borrowed heavily from him. By 1965 Watch Tower writers had accepted Morris' and Whitcomb's expositions on Noah's Flood, and this can be clearly seen in WTS literature from this time forward. The WTS seems to have largely abandoned Flood Geology after about 1980.

The Genesis Flood kicked off the modern young-earth creationist movement as exemplified by Henry Morris' Institute for Creation Research. Morris and his colleagues published many books and other literature advocating young-earth creation and Flood Geology. More recently the Answers in Genesis organization has become popular in young-earth creationist circles.

One can no longer dismiss this event by assuming that all Pre-Cambrian rocks have been too greatly altered by time to allow the fossils ancestral to the Cambrian metazoans to be preserved. It is true that one peculiar soft-bodied fauna has been found in Australia in strata that appear to be Infra-Cambrian, although they are younger than the Infra-Cambrian tillites [see "Pre-Cambrian Animals," by Martin F. Glaessner; *SCIENTIFIC AMERICAN*, March, 1961]. But even if all the Pre-Cambrian ancestors of the Cambrian metazoans were similarly soft-bodied and therefore rarely preserved, far more abundant traces of their activities should have been found in the Pre-Cambrian strata than has proved to be the case. Neither can the general failure to find Pre-Cambrian animal fossils be charged to any lack of trying.

If all the evidence is viewed without preconceptions about evolutionary processes, the suggestion is clear that at the end of the Infra-Cambrian period there was a phase of rapid and radical evolutionary change in animal life. In this period of a few millions of years, or at most a few tens of millions, the metazoan phyla evolved into the relatively large and complex organisms that are found as fossils in Cambrian rocks. Perhaps ancestral metazoans had existed previously. If so, however, it seems probable to us that only a few of them were of a size larger than microscopic until the very end of the Infra-Cambrian period.

Whatever other factors may have been involved in this evolutionary event, some trigger mechanism seems required to have set it in action. This impetus could have been the major climatic change that came at the end of the Infra-Cambrian ice age. The ice age itself would have created extremely adverse conditions for life. In particular the lowering of the sea level would have sharply reduced the area of the shallow seas, which include many of the most favorable habitats for marine life. In contrast, at the end of the ice age the improvement in climate and the rise of the sea level would have recreated a variety of favorable but biologically empty environments, in which the opportunity would exist for radical evolutionary changes to take place.

A causal connection between the Infra-Cambrian ice age and the appearance of the Cambrian fauna thus appears at least possible, and perhaps probable. Certainly a climatic event of an intensity unparalleled in the later history of the earth seems to have been closely followed by a biological event of profound significance in the history of life.

So once again we find that the *Evolution* book's quotation refutes its claim that the Precambrian fossil record is blank, devoid of life. The author is not merely inaccurate, but deliberately misrepresents his source reference.

The *Evolution* book continues with its dishonest theme. Quoting *Natural History* magazine,²⁴¹ which clearly states that Precambrian sediment beds "are **almost** barren of evidence of life", and speaks of Darwin's quandary about "why we do not find rich fossiliferous deposits belonging to these assumed earliest periods prior to the Cambrian system", the book falsely states (p. 43) that "although evolutionists find no pre-Cambrian fossils, the record being 'three-quarters ... blank,' they contend that evolution took place anyway." Yet even in 1959 the existence of extensive deposits of Precambrian stromatolites²⁴² (fossilized bacterial mats) up to three billion years old was well known. Again, the Precambrian fossil record is **not** blank.

The book states on page 44: "We cannot escape the scientific facts regarding this matter. The fossil record of the earth supports a sudden creation, not a slow evolution from primitive forms of life." This false conclusion follows from the book's previous lies. Of course, the fact that stromatolites as old as 3.5+ billion years have been found, followed more than three billion years later by a gradual appearance of multicelled Ediacaran life over a period of at least 60 million years, followed by the appearance and proliferation of life with hard parts (i.e. shells) over the next 55 million years, hardly

²⁴¹ *Natural History*, October, 1959, pp. 466-467.

²⁴² cf. <https://en.wikipedia.org/wiki/Stromatolite> More recent discoveries indicate that the oldest stromatolites are 3.7 billion years old.

supports a claim of “sudden creation”. One might claim “creation”, but 3.1+ billion years is hardly “sudden”.

Note that in 1967 the Watch Tower Society was teaching a form of the ancient Middle Eastern tradition that there were seven one-thousand-year periods making up the seventh day of creation, so that based on the notion that the seventh day was 7,000 years long, each of the creative days of Genesis was 7,000 years long. The “beginning” of Genesis 1:1 was somehow exempt from inclusion in this “creative week”. So in 1967 the Watch Tower Society taught that the creation of almost everything had taken place in the previous 48,000 years, except for unspecified events in “the beginning”. Thus, according to the Watch Tower’s timetable of history, the creation of all life, including the 3-billion-year-old stromatolites, took place within the last 34,000 years. To understand the motivation for the *Evolution* book’s author’s misrepresentations one must understand this. The Society more or less gave up on the 7,000-year creative day idea in the mid-1980s, so that younger JW’s today pretty much accept the scientifically accepted timeline for life of some 3.5+ billion years. Most JW’s under the age of 40 have not heard of this 7,000-year ‘day’ notion.

Book *Is the Bible Really the Word of God?* 1969

This was the Watch Tower Society's late-1960s attempt to answer the title question. It came up with a few new arguments but mostly recycled old material from Watch Tower publications. It suffers from the same general defects as Watch Tower writings in a similar vein, containing blatant misquotes, misrepresentations and misstatements of fact. From its publication in 1969 through the mid-1980s (see below) the Society advertised the *Is* book in *The Watchtower* and *Awake!* magazines once or twice a year.

I will critique only chapters 2-4 since they are the only ones that deal with supposedly scientific/historical material. Many of the arguments are covered elsewhere in this paper; references will be given.

Chapter 2: Genesis Account of Creation—Fact or Fiction?

The opening paragraphs (p. 11) chide Christians who view Genesis as largely myth, poetry and legend, and as scientifically in error. The book then argues that Genesis is far superior to other ancient creation stories by contrasting the Babylonian creation myth with the Genesis story of creation. But there is not a lot of difference scientifically, since the Genesis summary is either grossly in error or so vague that one cannot tell exactly what the account says. See page 145 for details. The book says:

Now, what does the Genesis account in the Bible say? First, it says, God created “the heavens and the earth.” Then he proceeded to prepare the earth for human habitation. At the beginning of this activity he ‘caused light to be’ for the planet earth. Then he formed an expanse above the surface of the globe, with waters beneath the expanse and waters above the expanse. Next, dry land, continents and other land masses, appeared above the surface of the global sea, and vegetation and fruitful trees were made to grow. Following this, ‘luminaries came to be in the expanse,’ to mark off seasons, days and years. Then came the creation of marine life and of winged creatures. After this, land animals were made, and finally God formed man from the dust of the ground.—
Genesis 1:1-28; 2:7.

The author leaves it to the reader to decide what “the heavens and the earth” are. For the ancient Jews who compiled the account, “the heavens” were what one saw when one looked up at the sky. Claiming or implying, as Watch Tower writers always do, that the phrase includes anything other than the visible sky (such as the atmosphere or outer space) is pure speculation based on the fallacy of reading into a text what it does not explicitly say, e.g., the author's biases or modern scientific ideas. “The earth” was what one walks upon, i.e., the land, as opposed to the sea and the heavens. There is no evidence that the Bible writer had in mind more than that, such our modern notion of “planet earth”.

Just when did light come to be? What was “the expanse”? Bible scholars understand the Hebrew word *raqia* to mean “something beaten out flat” like a bronze shield. It certainly has no connotation of a 3-dimensional structure like our atmosphere, contrary to long-standing Watch Tower claims. It simply means “the sky as seen by one looking up”, just as the sky gives the impression of a huge, nearly flat blue dome spanning from horizon to horizon (see page 128). Therefore the “waters beneath the expanse” means nothing more than the sea. The phrase the “waters above the expanse” has been argued about for millennia, but modern scholars generally take it to mean the part of the entire body of primeval waters that exist *above* the sky, as pictured in Babylonian cosmology. See page 297 for pictures.

The account next has God creating dry land and **all** plant life. But the fossil record shows that fruit trees, grasses, and most of today's plants appeared *long after*—as much as 400 million years after—the

first appearance of sea creatures and birds and land animals—supposedly on the 5th and 6th creative days. On the 5th day came the creation of marine life and winged creatures—**all** of them. On the 6th day came land animals and man. But the fossil record shows that the earliest flying insects appeared about 400 million years ago, pterosaurs about 230 million years, birds of a sort (like archaeopteryx) around 160 million years, and bats around 60 million years, whereas the earliest true mammals appeared at about 200 million years near the Triassic-Jurassic boundary, and modern mammals did not appear until after the Cretaceous-Paleogene extinction at which the dinosaurs were killed some 66 million years ago. Genesis obviously contradicts the fossil record, and is therefore fiction.

As usual, the Watch Tower writer quotes a questionable source as to the reliability of the Genesis account.²⁴³ Since the Genesis account is either wrong or hopelessly vague about the order and events of creation, it is irrelevant that it appears to be a lofty, dignified statement, as the quoted author (J. A. Thompson) says:

It [the Genesis account] is a lofty, dignified statement devoid of those coarser elements that are to be found in the non-biblical creation stories.

But Thompson did not believe the Genesis account is necessarily scientifically accurate. In the quoted article he wrote:²⁴⁴

Something is lost if in interpreting this chapter we press the exegesis to unnecessary limits. The whole is poetic and does not yield to close scientific correlations... If we allow that Gn. i has an artificial literary structure and is not concerned to provide a picture of chronological sequence but only to assert the fact that God made everything, we avoid these speculations [about exactly what ‘day’ means in Genesis 1].

Next the *Is* book claims (p.13) that the Bible describes the shape of the earth completely accurately, but this again is completely wrong (see page 120) since it repeatedly indicates that the earth is shaped like a pizza pie. Isaiah 40:22 clearly refers to the **circle** of the earth, not the *ball* or *sphere* of the earth.

Next the *Is* book tackles the origin of the universe. It argues that one can equally well accept the Big Bang Theory, the Steady State Theory, or the Oscillating Theory, which were accepted by some scientists until the early 1970s. But it refers to sources that were even then out of date, since by 1969 most cosmologists had accepted the Big Bang Theory, and here in 2022 it is universally accepted.²⁴⁵ There are scientists today who are considering several hypotheses about the origin of the universe,²⁴⁶ including “multiverse hypotheses”.

On page 15 the *Is* book says:

Actually the Genesis account goes far beyond the confused theories of twentieth-century science. How so? They do not come to grips with the major question: Where did the original matter or matter-producing energy come from to form the universe in the first place? But the Bible answers that question.

The Bible does **not** answer that question. While such ultimate origins remain unknown to science, saying that “God created” in no way answers that question, any more than claiming that 5th-dimensional space aliens created everything.

²⁴³ Professor J. A. Thompson writing in *The New Bible Dictionary*, (J. D. Douglas, ed. Eerdmans, 1963). Biblical archaeologist and Old Testament scholar Thompson was a professor at Baptist Theological College of New South Wales. The Baptists generally are biblical literalists, the majority professing young-earth creationism, although Thompson did not go along with such literalism; he merely believed in the Bible’s inspiration. Thompson also published *The Bible and Archaeology* (Eerdmans, 1962). As a Baptist professor he was hardly a scientifically objective commentator.

²⁴⁴ Thompson, p. 271.

²⁴⁵ https://en.wikipedia.org/wiki/History_of_the_Big_Bang_theory

²⁴⁶ cf. <https://www.youtube.com/watch?v=5BnljyQ1sak>

<https://www.youtube.com/watch?v=7ImvlS8PLIo>

<https://www.youtube.com/watch?v=GzPqDVU9nCG>

And of course, the question, “Where did God come from?” is unanswered. Saying that “God has always existed” or that “God is inscrutable” or that “God is the source of all energy” are merely special-pleading rationalizations devoid of evidence.

The fact is that no one knows the ultimate origin of *anything*.

Next the *Is* book tries to deal with “the source of energy and matter” (p. 15). On page 17 it quotes Isaiah 40:26 in the usual Watch Tower way, to the effect that God is supposed to be described as the source of all energy and matter. This idea is debunked beginning on page 142 of this paper. All that the passage says is that God is really, really strong. It has nothing to do with the modern concepts of energy and matter.

On page 17 the *Is* book begins an exposition on the six days of creation. It repeats the usual Watch Tower tropes popular since Russell’s day: “in the beginning” allows for the creation of the universe and earth billions of years ago, and the creative days were 7,000 years long.

But in the usual Watch Tower way, the writer engages in gross scholastic dishonesty even in describing what the Bible says. While Genesis does not explicitly include “the beginning” in the period of the creative days, Exodus does:

For in six days Jehovah made the **heavens and the earth, the sea and everything that is in them**, and he proceeded to rest on the seventh day.—Exodus 20:11

So the Bible itself includes “the beginning” in the six days of creation. See page 145 of this paper for more.

On page 19 the *Is* book begins to argue that the incomplete state of scientific knowledge about the earth’s earliest history implies that all earth science is highly questionable, and so should be taken with a large grain of salt when it contradicts Genesis. This is just a straw man argument, since a good deal of scientific knowledge is on extremely good footing.

On page 20 the *Is* book begins arguing that the Genesis account does not say that the creation of light and the sun, moon, and stars on creative days one and four means the actual *creation* of these things, but merely their appearance from the viewpoint of someone on the earth. But this again flies in the face of Exodus 20:11. It is simply a repetition of longstanding Watch Tower tradition.

On page 24 we find a straw-grasping argument about why plants could survive for 7,000 years from their creation on day three to the clearing of the atmosphere on day four. Since the entire account of plant creation is completely at odds with the fossil record, the argument is moot.

Page 25 begins a thoroughly dishonest and misinformed attempt at debunking all of geology. It ignores the actual history of geology, such as the fact that early geologists were all Christians and most entered their studies of the earth with the goal of proving the reality of Noah’s Flood, but by about 1830 were forced to give that up because their discoveries proved that the many geological layers could not have been the product of a massive flood a few thousand years ago. A “university professor of geology” is quoted in his textbook *Outlines of Geology* (Chester Longwell, John Wiley & Sons, 1949) (no source reference is given) to the effect that geologists know hardly anything about their subject. But in the 20 years from 1949 to 1969 a great deal was learned, such as how plate tectonics works. Radioactive dating methods are claimed to be invalid, again using completely out of date source references. The conclusion is that when science and Genesis conflict, one should believe Genesis.

Page 29 begins a rambling defense of Genesis’ description of the creation of Adam and Eve, and

some events in the Garden of Eden. It contains no science, but much straw-manning. The chapter concludes that there is every reason to reject science and accept Genesis as fact.

Chapter 3: Was There an Earth-wide Flood?

This chapter is a good example of how bad Watch Tower arguments can be. The writer is unaware of the hypocrisy inherent in his and the Bible's justification of the Flood.

Note that, according to then-existing Watch Tower chronology and earlier statements in the book, mankind was created at the end of the 6th creative day about 6,000 BP (before present), land animals began to be created at the beginning of the 6th day 13,000 BP (6,000 + 7,000), sea life and birds on the 5th day 20,000 BP, and plant life on the 3rd day 34,000 BP.

The chapter begins with this complaint (p. 35):

By the days of Noah, the Bible record says, the earth had become “full of violence,” as is also true of our day.

Such irony. The fossil record shows that from virtually the beginning of the existence of multi-celled animals with hard parts in the early Cambrian Period some 540 million years BP, predators have existed. Predation necessarily requires violence, whether a predator tears apart its prey, poisons it, or swallows it whole. This is true whether one accepts standard geological dating or goes with Watch Tower dating at some 20,000 years ago.

God, as the Creator, is responsible for every bit of the violence committed by predators. So from the beginning of recognizable animal life 20,000 or 540 million years ago, the earth was “full of violence” in the animal kingdom. Why would this violent Creator complain if his last creation, mankind, was just as violent as the rest of his creation?

The book continues:

What resulted? The Bible relates that God informed Noah, “because all flesh had ruined its way on the earth,” he would wipe out that violent world of mankind by a flood.

Ah. So the Creator of all that violence would compound it by violently wiping out his own violent creation. Makes sense.

Noah was to build a spacious ark for the saving of his household and all the various kinds of land animals and birds.

Why not just wipe out the violent humans just as an angel killed 185,000 Assyrians who were attacking the Israelites under King Hezekiah (2 Kings 19:35)? Isn't wiping out the entire world of animals and plants gross overkill? Or did God also regret making a world of violent animals?

Then, at God's command, the floodwaters fell, covering even the highest mountains. Of mankind, only those in the ark survived. (Genesis 6:12, 13; 7: 1-24) Did these things really happen? There is strong evidence that they did.

As this paper shows in various places, there is **NO** evidence that “these things” really happened.

Some persons will accept this account only if the Flood is viewed as merely a *local* one.

More to the point: people who reject the notion of a global Flood also reject most of the details in the Genesis account, and view it as myth or legend.

But that is not what the Bible says. If the Flood had been local, why would not God simply have told Noah to move to another locality? Why all the labor of building a large ark for survival? If the Flood did not cover all the earth, why bring animals and birds into the ark to preserve all the different kinds? Animals elsewhere could have

survived. And the birds could have easily escaped by flying to another area. So we must face the fact that to believe this account means accepting that there was a *global* flood.

Yes, along with all manner of things for which there is zero or negative evidence, as will be shown.

The Floodwaters—From Where and To Where?

This subheading (p. 36) again shows that Watch Tower writers have no idea what they are talking about, and have no real ability to distinguish crackpot source references from good ones. The book begins:

Of course, you may wonder where such a vast amount of water could come from. The Genesis account states that during the second creative period or “day,” when the earth’s atmospheric “expanse” was formed, there were ‘waters beneath the expanse’ and ‘waters above the expanse.’ (Genesis 1:6, 7) The waters “beneath” were those already on earth. The waters “above” were huge quantities of moisture suspended high above the earth, forming a “vast watery deep.” These waters fell in Noah’s day.—Genesis 7: 11,12.

The author here repeats longstanding Watch Tower tradition. But the tradition entails the physical impossibility of a “vapor canopy” and ignores the meaning of the Genesis text as discerned by actual Bible scholars. The notion of an “expanse” has been covered elsewhere in this paper. The material on pages 11, 98, and 297 shows why the notion that the “waters above the expanse” were a “vapor canopy” is not only unbiblical, but physically impossible, and that the successors of its proponents such as the Henry Morris quoted below have even published material showing *why* it is physically impossible, so that their fellow young-earth creationists should stop using the idea.

Briefly, the notion of a vapor canopy was promoted by Seventh-Day Adventist George McCready Price beginning around 1900, was picked up by young-earth creationist Henry Morris and others in the 1950s, and featured prominently in Morris’ 1961 book *The Genesis Flood*, which kicked off the modern young-earth creationist movement. Although Morris was a professor of hydraulics, he was demonstrably incompetent in subjects where his young-earth creationist beliefs conflicted with science.

Note how the *Is* book naively quotes Morris as if he were a reliable source of scientific know-how:

In the book *The Genesis Flood* (pages 240, 241), coauthor Professor Henry M. Morris of the Virginia Polytechnic Institute examines the scientific aspect of such a water canopy above the earth. He says:

“The region above about 80 miles is very hot, over 100° F and possibly rising to 3000° F, and is in fact called the thermosphere for this reason. High temperature, of course, is the chief requisite for retaining a large quantity of water vapor. Furthermore, it is known that water vapor is substantially lighter than air!”

Morris displays his scientific incompetence. The region above 60 miles is defined as *space*, so that above 80 miles is also space, which is nearly a complete vacuum. As such it is extremely tenuous—so tenuous that satellites can orbit at 100 miles. If the entire region above 80 miles were nothing but water vapor, at today’s pressure, it would amount to only a small fraction of a millimeter if condensed and spread evenly over the surface of the earth. Also, the temperature is high because the upper atmosphere absorbs high energy radiation from the sun—the thermosphere protects the earth’s surface from ultraviolet and other types of radiation. If there were a thick vapor blanket up there, only the tenuous topmost portion would be hot, while the rest of it would be at much lower temperatures, because it would be shielded from the radiation by the topmost layer. So the idea that a vast thermal blanket once existed in the upper atmosphere and provided enough water to flood the earth is not physically possible. And again, the Watch Tower writer is not scientifically competent enough to realize any of this.

The *Is* book continues:

Of course, no person today can know what the composition or nature of the upper atmosphere was in the ancient past. However, as Professor Morris goes on to say:

“There is thus nothing impossible about the concept of a vast thermal vapor blanket once existing in the upper atmosphere!”

There most certainly is!

The Bible says that, when the suspended waters fell, they “overwhelmed the earth so greatly that all the tall mountains that were under the whole heavens came to be covered. Up to fifteen cubits [about twenty-two feet] the waters overwhelmed them.”—Genesis 7: 19, 20.

Yes indeed. A fraction of a millimeter of water is more than sufficient to cover all the tall mountains.

Apparently realizing that there were serious problems with his explanation, the writer next argues (p. 37) that the earth’s surface pre-Flood was much smoother than it is today. The Himalayas, the Alps, the Andes, and the Rocky Mountains were once much lower than they are today. Indeed they were, but not a mere 4,300 years ago. Rather, many tens of millions of years ago.

As if to bolster the idea that today’s high mountains were much lower in the not-distant past, the writer quotes a popular book that said:

If all the irregularities on the earth’s surface were to be smoothed out, both above and below the water, so that there were no dents or holes anywhere, no land would show at all. The ocean would cover the entire globe to a depth of 8,000 feet!

This 8,000 foot figure is correct, but creates a fatal problem that the *Is* book writer is too ignorant to recognize, as shown below.

The *Is* book quotes a 1949 issue of the magazine *The Scientific Monthly* to the effect that “there were no high mountains forming physical or climatic barriers” in “earth’s earlier days”. Of course, no dates are assigned to “earth’s earlier days”, but the implication is that they were the days immediately preceding the Flood.

This is a classic example of a Watch Tower writer telling a flat-out lie. The “earlier days” mentioned by *Scientific Monthly* were actually the 100 million years of the Mesozoic Era, which scientists of the time dated to between about 200 million and 50-60 million years ago. See the material beginning on page 51 of this paper for details. So the writer deliberately misled the reader to conclude that a scientific source that spoke of a period between 200 and 50 million years in the past actually meant a period just 4,300 years earlier. On the basis of his lies and general misrepresentations the writer says:

So, when the Bible says that the floodwaters covered the highest mountains, we are not to think of water sufficient to cover Mount Everest today.

Of course, as usual the writer gives no numerical figures for how high the pre-Flood mountains must have been.

The *Is* book next tackles (p. 38) the question of how deep the oceans were pre-Flood as opposed to how deep they are now. The idea is to argue that the post-Flood deepening of the ocean basins, along with the rise of the high mountains, left sufficient volume to contain all of the runoff from the floodwaters.

As usual the *Is* book author quotes crackpot or outdated sources. Young-earth creationist author Henry Morris is quoted to the effect that seamounts are actually drowned islands in the middle of the ocean. A 1957 *Scientific Monthly* article is quoted to the effect that great undersea mountain ranges sank quickly enough to drown coral reefs that once sat near the sea surface.

These things were mysteries alright—until the science of plate tectonics cleared them up beginning in the late 1960s. Seamounts, such as the dozens found in the great Emperor Seamount chain²⁴⁷ that runs 3,900 miles from Hawaii to the Kamchatka Peninsula, were first volcanic islands, which gradually eroded down to the sea surface, and then as the tectonic plate on which they sat slowly drifted past the deep magma sources that formed them, sank beneath the surface, drowning the tops of the remains of the volcanic islands and allowing coral reefs to form. This process is ongoing today in the Hawaiian Islands.

Furthermore, some of the supposedly drowned mountain ranges have turned out to be the mid-ocean ridges that form the spreading centers between tectonic plates.²⁴⁸

The Big Island of Hawaii is the largest mountain on earth and stands some 33,000 feet above the surrounding ocean floor, about 13,800 feet (4,200 meters) above sea level. If the earth's surface were smoothed out completely, as the *Is* book writer mentioned, and today's ocean water spread out over it, the depth would be about 8,000 feet. So the Big Island would stand something like 25,000 feet above the sea surface. Applied to the waters of Noah's Flood, it is evident that Hawaii's existence makes the Flood impossible—at least, without God creating most of the floodwaters from nothing. The same applies to all other high mountains.

The idea that Hawaii and other high mountains formed after 2370 BCE, as the *Is* book writer is forced to claim, creates other severe problems. The Big Island contains something like 186,000 cubic miles of volcanic lava, most of which must have erupted in a few centuries after 2370 BCE. After all, not only the Big Island but all the other Hawaiian Islands would have had to erupt, go dormant, be eroded down to their present state, and many drowned to form the Emperor Seamounts. This is simply not possible. The amount of volcanic gases would have poisoned earth's atmosphere, making the planet uninhabitable. And consider the plant and animal life indigenous to Hawaii. The very oldest remaining islands erupted more than five million years ago so all this life must have arrived between then and 2370 BCE. Obviously the later date leaves no time for it to have evolved into the myriad forms we see today. Even more so if the Flood left the islands devoid of life.

Without the physically impossible scenario painted by the *Is* book author and various young-earth creationists, there is not enough water on earth to cover the high mountains that clearly existed before the Flood, nor a place for the water to go if God miraculously created enough to cover the mountains.

As for such gigantic miracles, once again: what is the point? Why would an intelligent, supremely powerful God create millions of cubic miles of water to flood the entire earth and kill almost all life, when all he had to do to wipe the earth clean of wicked humans was assign an angel to kill them? Is this God insane? Is he merely a murderous monster? The entire Flood story is nonsensical.

A Change in Climate

Here the *Is* book again invokes the old standard Watch Tower claim that the pre-Flood vapor canopy created hothouse conditions in the entire earth, so that when the floodwaters fell there was a drastic change in climate, the polar regions becoming cold.

²⁴⁷ https://en.wikipedia.org/wiki/Hawaiian%E2%80%93Emperor_seamount_chain
<http://pubs.usgs.gov/gip/hawaii/page07.html>
<http://www.marinebio.net/marinescience/02ocean/hwgeo.htm>
<http://www2.hawaii.edu/~nasir/>

²⁴⁸ [https://en.wikipedia.org/wiki/Mid-ocean_ridge#:~:text=A%20mid%20ocean%20ridge%20\(MOR,along%20a%20divergent%20plate%20boundary](https://en.wikipedia.org/wiki/Mid-ocean_ridge#:~:text=A%20mid%20ocean%20ridge%20(MOR,along%20a%20divergent%20plate%20boundary).

This section is an excellent example of the way Watch Tower writers often quote questionable or crackpot sources, so we will look at it in detail.

The *Is* book states (p. 39):

Since a globe-encircling water canopy would have caused a hothouse state reaching even to the polar regions, the falling of this water in an earth-wide flood should have produced a drastic change in earth's climate. Is there any evidence that there has been such a drastic change? Yes, there is. And the change is so striking that, without the Bible, geologists find themselves very hard pressed to explain it.

Various scientific publications present evidence that there was once an earth-wide warm climate. As an example, French scholar Henri Decugis, in *The Degeneration of the Living World*, says:

“[The earth once] enjoyed a uniformly warm and wet climate in every latitude... Islands and continents were covered with a prodigious luxuriant vegetation of continuous growth... There was, at the beginning, but a slight difference in the temperatures of summer and winter. Fig-trees have been unearthed in Greenland in latitude 70° North and palms in Siberia.”—1941, pp. 12, 13.

So there is evidence of what we might expect would result from the failing of a water canopy in a global flood — a drastic change in climate.

There are several things wrong with these paragraphs.

As shown on page 11 of this paper, even young-earth creationists have abandoned the vapor canopy idea because of its physical impossibility. Furthermore, the idea of earthwide “hothouse” conditions that are still cool enough to allow life to exist is hopelessly naive. A vapor canopy would produce a massive greenhouse effect dwarfing anything proposed by climate scientists for foreseeable accumulations of carbon dioxide and methane. It has been calculated that a canopy containing the equivalent of just 12 inches of water would raise air temperature above the boiling point of water.²⁴⁹ Imagine what a canopy equivalent to thousands of feet of water would do. And of course, that amount of water suspended in the upper atmosphere by the pressure of the air below it would result in extreme overpressure at the earth's surface. Basic physics shows that the equivalent of two thousand feet of water ‘way up there’ would create a surface air pressure about equal to that two thousand feet down in the ocean—about 60 atmosphere's worth, some 485 pounds per square inch. That's far too high for life to survive without drastic changes to basic biology and to the atmosphere, such as oxygen concentration.

Of course, given his essentially zero understanding of science, the *Is* book author is entirely unaware of these problems.

In support of his physically impossible vapor canopy claim, the author next argues that the earth's climate was once uniformly warm. He again quotes Henri Decugis writing in *The Degeneration of the Living World* but fails to give a proper citation. And no wonder. It turns out that Decugis was not a scientist of any sort, but an economist and lawyer, who wrote an amateur book setting forth his dicey personal opinions about evolution and modern life on earth. And his book apparently was only published in French under the title *La Vieillesse du Monde Vivant*. No wonder the *Is* book author failed properly to cite the book and tell his readers that it was available only in French. A negative 1950 review in *The Quarterly Review of Biology* is linked to below.²⁵⁰ And of course, Decugis' knowledge of ancient climates is highly questionable. See the material beginning on pages 51 and 131 of this paper for more details.

²⁴⁹ <http://www.talkorigins.org/indexcc/CH/CH310.html>

²⁵⁰ <https://www.journals.uchicago.edu/doi/abs/10.1086/397725?journalCode=qrb>

As for fig trees in Greenland and palm trees in Siberia, this is no mystery. In the decades since 1941 much has been learned about the earth's climate history. During the Eocene Epoch (56 to 34 million BP) climate,²⁵¹ for whatever reason, reached what is called the Eocene Thermal Maximum 49 million years ago, when earth's average temperature reached 18° F (10° C) higher than today. No ice was present at the poles and a great variety of semi-tropical life was there. After that, temperatures decreased so that by 34 million BP ice became present at the poles.

In view of the above facts there is no evidence of what we might expect would result from the falling of a water canopy in a global flood—a drastic change in climate some 4,400 years ago.

Vast, Sudden Destruction

This subheading repeats the standard Watch Tower claims of the time regarding “countless thousands of animals buried together”, including “frozen mammoths” and so forth. It also quotes one Professor F. C. Hibben on excavations of torn-up frozen animals in Alaska. It turns out that Hibben grossly exaggerated his claims in order to sell his popular books. The section fails to cite any geological evidence for “vast, sudden destruction” 4,400 years ago.

I refuted these claims on pages 18 and 42 above.

Universal Flood Traditions

This subheading makes the usual Watch Tower claim that a massive flood a few thousand years ago would be remembered worldwide. I refute this beginning on page 139.

The author quotes from the laughable book *Target: Earth*. I showed how ridiculous and dishonest this amateur book is on page 34.

Could the Ark Have Held All Those Animals?

The *Is* book argues that the carrying capacity of Noah's Ark was sufficient to hold all the animals. Out of some 3,000 species of land mammals, only some 300 are larger than a horse, while some 2,200 are no larger than a rabbit.

But this argument is a huge straw man because it ignores all the other sorts of land animals that would have had to have been on the Ark—insects, spiders, snakes, etc.—as well as a year's supply of food. It also ignores the logistics of caring for thousands of animals, such as feeding them and clearing away their dung. There is no way that eight people could carry out the required tasks, as any zookeeper will confirm.

Plenty of criticisms have been written on this subject,²⁵² so I will not repeat them.

The Christian Viewpoint

The final subheading in the *Is* book (p. 44) argues that belief in a fullblown global Flood must be the proper Christian's view. It complains that many Christian religions do not hold to this, but view the Flood as myth or imagination. It then asks:

In view of all the evidence presented, is there any sound basis for objecting to this Bible account?

²⁵¹ <https://en.wikipedia.org/wiki/Eocene>

²⁵² cf. <http://www.talkorigins.org/faqs/faq-noahs-ark.html>

Indeed there is, as shown above and in the rest of this paper.

Every point has been shown to be both reasonable and in accord with known facts.

Hardly! As shown above most Watch Tower arguments are either complete nonsense, being at odds with well-established science, or are the product of wishful thinking, or are based on young-earth creationist ideas that have long been refuted and which the Society itself rejected in the 1980s. It matters not that the New Testament has various NT writers and Jesus saying that the Flood was real history. Because the Flood account contradicts known fact, it cannot have been a real event. A terrible local flood perhaps, but not what believers in a global Flood claim. Believing in a literal Noah's Flood is equivalent to believing that the moon is made of cheddar cheese just because one believes the Bible says so.

Chapter 4: The Bible and Ancient History—Do They Agree?

The Bible is inarguably a remarkably accurate source of ancient history. But it is not fully accurate, as the above material on the Genesis account of creation shows.

The chapter begins (p. 45) with a fine principle:

The book that is to measure up as the Word of God must contain the truth no matter what subject it discusses.

As mentioned in the above material, even a single instance of clear error would disqualify the Bible from being the infallible Word of God.

The chapter discusses several instances where Bible accounts are in harmony with well-known history, and where historians and archaeologists once had views in conflict with Bible histories but eventually had to change their views because new information confirmed the Bible accounts. These are weak arguments.

As usual many quotations from source references have incomplete citations, making it harder for readers to get hold of the references.

The chapter discusses reasons that Bible accounts might differ from “archaeologists’ interpretations”. While some reasons are valid, others smack of special pleading and other straw man tactics of argumentation. Some are simply complaints that certain ancient sources are obviously false, which are somehow supposed to bolster the Bible’s credibility.

For example, “The Sumerian King List”²⁵³ assigns 241,000 years to the reign of eight kings before the Flood. This is actually a set of cuneiform texts from around 2,000 BCE and discovered at various sites. Obviously the figures are fiction, and the *Is* book leaves it to the reader to figure this out. Yet it ignores the fact that Genesis assigns obviously fictional ages to pre-Flood characters, such as 950 years for Noah. Such double standards are evident throughout the chapter.

The chapter ignores the fact that the correctness of certain items such as locations and placenames does not mean that an entire account represents actual history. Today we have the genre of historical fiction such as the writings of James Michener, whose meticulously researched books place fictional stories within a real historical framework that includes accurate descriptions of people, places, and events. For example, in *The Source* (1965) “Michener recounts the origins and rise of Judaism starting with early Hebrews and carrying the reader all the way through to the modern Israeli-Palestinian

²⁵³ https://en.wikipedia.org/wiki/Sumerian_King_List

conflict.”²⁵⁴ Despite Michener’s accurate description of general Near-Eastern history and historical locations, the human story is entirely fictional. The *Is* book writer completely ignores this possibility for various Bible accounts.

For obviously fictional stories such as the Creation and Flood accounts in Genesis, this results in the Watch Tower writer’s laughable attempt to do the equivalent of arguing that Michener’s historical fiction is reality. After all, Genesis has the order of creation of sea creatures, flying creatures, and land creatures completely wrong. And a literal interpretation of the “days of creation” assigns them literal 24-hour days. This is why most knowledgeable “Bible believers” say that Genesis and other Bible books contain myth and legend, and are not to be taken literally. After all, even the Watch Tower Society does not take Genesis entirely literally, having assigned 7,000 years to the creative days, or today an unspecified number of “millennia” that readers can think of as 7,000 years or hundreds of millions of years as they please.

Early Post-Flood History

The subheading begins with this (p. 48):

Consider the Bible’s post-Flood history. It shows mankind spreading out over the earth from one central point during the latter part of the third millennium B.C.E. That central point was the Plains of Shinar.

The Bible is wrong. Mankind’s history goes back at least two million years, and the archaeological history of modern humans goes back hundreds of thousands, depending on how one defines ‘modern’. Since the end of the last ice age some 14,000 BP, a number of centers of agricultural civilization developed, as did many apparently independent small settlements. See pages 320 and 328 of this paper for details. Agricultural civilizations developed in Mesopotamia, Egypt, China, India, and Mesoamerica at least as early as 7,000 BP.

There, the Bible states, men acted contrary to God’s will in proceeding to build a city called Babel and attempting to construct a great tower with its “top in the heavens.” God confused their common language, and “scattered them from there over all the surface of the earth.” (Genesis 11:1-9) Should we expect history or archaeology to confirm this account? If so, to what extent?

The above-referenced pages later in this paper set forth many instances of solidly established historical sites that show there was no single geographical point from which mankind spread a few thousand years ago. Indeed, humans have been spreading around the globe, in one form or another, for some two million years. *Homo erectus* remains have been found in Africa, Europe, and Asia going back some two million years. Later humans such as *Homo antecessor* and *Homo Heidelbergensis* were also widespread.²⁵⁵ The Neanderthals originated at a time not clearly known, somewhere between perhaps 400,000 and 800,000 BP, spread all over Europe and western Asia, and disappeared from the fossil record about 40,000 BP²⁵⁶ but not before mating with modern humans enough that some 1% to 3% of Neanderthal DNA is found in most non-African modern humans. It was similar with the virtually unknown Denisovans, whose DNA differs from Neanderthal DNA and comprises some 2% to 5% of that of many modern Asian populations.²⁵⁷ Since Neanderthals and Denisovans were clearly extinct long before any speculated post-Flood humans, and present Watch Tower teaching is that Neanderthals were fully modern humans, we have a fatal problem for the Society’s claims: Neanderthals and Denisovans do not fit into any possible post-Flood scenario.

²⁵⁴ https://en.wikipedia.org/wiki/James_A._Michener

²⁵⁵ https://en.wikipedia.org/wiki/Early_human_migrations

²⁵⁶ <https://en.wikipedia.org/wiki/Neanderthal>

²⁵⁷ <https://en.wikipedia.org/wiki/Denisovan>

The *Is* book continues:

The place is known. Archaeologists have located the ancient site of the city of Babel or Babylon in Mesopotamia. But historians and archaeologists today acknowledge that they can neither prove nor disprove the rest of the account. Take the matter of the origin of different languages within the human race. Professor of Anthropology and Linguistics G. L. Trager shows that, while the evidence points to a common age of all ancient tongues, scholars do not know how they began. He says:

“Historical knowledge about existing languages goes back only a few thousand years...”

This is a non-sequitur: historical knowledge of *any* languages goes back only about 5,000 years, because the oldest written languages only go back that far. Spoken language is not retained in any records whatsoever.

“There are no ‘primitive’ languages, but all languages seem to be equally old and equally developed.”

“Equally old”? Based on what facts? No evidence is given.

“We do not know whether all languages proceed from a single original source, or how long they have been developing.”

Modern linguists have done comparative analyses on thousands of languages and concluded that only a dozen or so “proto-languages” may have given rise to them. These include Indo-European, Afro-Asiatic, Niger-Congo, Sino-Tibetan, Austronesian, and Dravidian.²⁵⁸ Many are unwritten and so their history is at best speculative and determined by subjective comparative analysis, i.e., by comparing words in various languages to see if they have anything in common.

However, something important is revealed in the study of the spread of ancient languages to different parts of the earth. What is that? One particular part of the earth is seen as the focal point from which the spreading began. Identifying that point, Sir Henry Rawlinson, Oriental language scholar, says:

“If we were to be guided by the mere intersection of linguistic paths, and independently of all reference to the Scriptural record, we should still be led to fix on the plains of Shinar [in Mesopotamia], as the focus from which the various lines had radiated.” [21]

The reference to Henry Rawlinson is to an 1862 book containing lectures he gave at Oxford University in 1859. While Rawlinson was a brilliant Assyriologist, discoveries since 1862 have made his notions obsolete. For example, the Indo-European language family seems to have originated about 6,000 to 8,000 years ago in the general area of the Caucasus in western Asia,²⁵⁹ perhaps in the steppes north of the Black and Caspian Seas, or a bit south of that in Anatolia, or a region around Armenia to northern Mesopotamia. These regions are far from Shinar in southern Mesopotamia. The family probably gave rise ultimately to Hittite, Greek, Latin, Armenian, Indian languages, Persian, Slavic, Germanic languages, and a host of others.

Contrary to what the Bible says, historians previously pointed to Egypt in Africa as the site of the earliest civilization. However, note what archaeologist Jaquetta Hawkes, editor of *The World of the Past*, states:

“Egypt was long believed to be ... the centre from which all civilization was carried to the rest of the world. Archaeological studies have proved otherwise. Both in the beginning of farming ... and in the first development of true civilization, Egypt played a role secondary to that of Western Asia.”—Vol. I, p. 443.

This lines up with the Biblical account.

Hawkes’ 1963 book is obsolete in view of more recent archaeological discoveries. See the

²⁵⁸ <https://www.mustgo.com/worldlanguages/language-families/>

²⁵⁹ https://en.wikipedia.org/wiki/Proto-Indo-European_homeland

discussions of several dozen such discoveries beginning on page 320 of this paper. The fact is that civilization, however one defines it, developed independently in several regions of the world.

The *Is* book concludes this subheading (p. 50):

It can be seen, then, that the ancient records, when available, harmonize with the Bible on matters of geography, customs and other details.

A careful look at *all* archaeological material, whether in 2022 or from 1969, shows that the book's conclusion is based on a biased assessment of such material.

A further subheading, "Exodus From Egypt" (p. 52), gives the author's opinion about why Egyptian records fail to say anything about the sojourn of the Israelites in Egypt or the later Exodus to Palestine. The events were supposedly too embarrassing to Egyptian rulers for these things to have been recorded. Few modern historians dispute that there were Israelites in Egypt in certain periods, or that Egypt invaded Palestine at various times, so this is largely a moot point. What is disputed are many details, which the book fails to deal with.

A glaring omission from the *Is* book is a discussion about historical evidence for the Exodus, of which there is none outside the Bible. According to the Bible account some 600,000 men of military age left Egypt, along with old men, women, and children, totaling perhaps three million people. These were supposed to have wandered around the wilderness of the Sinai Peninsula for 40 years before entering Palestine. The problem is that these three million people left absolutely no archaeological evidence of their presence.²⁶⁰ One would expect that millions of people would leave *some* trace of their existence over 40 years. For this and other reasons, modern historians view the Exodus story as mostly myth with a seed of actual history. A handful of biblical commentators have speculated that the figure "600,000" comes from a wrong translation of certain Hebrew words, so that "three million" should be more like "30,000". But even that number of people should have left physical traces in the Sinai desert in 40 years of wandering.

The rest of the *Is* book engages in rationalizations of why one should accept all of the Bible's supposedly historical accounts as true. But most of it reads like someone trying to rationalize why the moon is made of cheddar cheese. Since the Genesis account demonstrably contains the fictional Creation and Flood stories, thinking persons will view the entire Bible with that in mind.

²⁶⁰ https://en.wikipedia.org/wiki/The_Exodus

Book Life—How Did It Get Here? By Evolution or by Creation? 1985

The Watch Tower Society produced this atrocious book for some 30 years. It suffers from the same general defects as the 1967 *Evolution* and 1969 *Is* books, but contains even more blatant misquotes, misrepresentations and misstatements of fact. I have documented more than 100 of these defects, most with online descriptions.²⁶¹ Others have documented many of these defects.²⁶²

The *Creation* book was written/compiled by Harry Peloyan, long-time editor-in-chief of *Awake!* magazine. He also wrote the 1967 *Evolution* book, and I strongly suspect the 1963 *Awake!* issue analyzed above. Peloyan obviously took delight in grabbing out-of-context quotes from scientists and using them against science, even though this is thoroughly dishonest. Over the years Peloyan was admonished by various people to quit this dishonesty. Apparently he thought that all's fair in religion and war. That others in Writing, as well as Governing Body members, failed to reign him in is a black mark against the Watch Tower Society.

In the following, I'll discuss two especially blatant misrepresentations in the *Creation* book. The first shows how the views on evolution of a well-known evolutionary biologist were misrepresented. The second shows how the views of a young-earth creationist were misrepresented as if they were the views of the editors of a popular science-related magazine.

Misrepresentation of Zoologist Richard Lewontin

From the November, 2017 JW Broadcasting video:

Splane 3:33: “[Very often a writer will supply two or three pages of photocopies before and/or after a quote of interest.] In that way, our researchers can examine the quote in context, to make sure that what we’re seeing in print is really what the author of the quote had in mind.”

Splane 4:02: “For example, an evolutionist might make a statement which, on the surface, appears as to confirm his support of creation. Or perhaps an atheist will make a statement that seems to indicate that he believes in God. But when you examine the quote in context, you realize that isn’t what the author had in mind at all. We would never *deliberately* distort a quotation. We try very hard to use all of our quotations in context.”

The editions of *Creation* from 1985 through 2003 claimed that the eminent evolutionary zoologist Richard Lewontin supports creationism. It cited²⁶³ an article in *Scientific American* magazine²⁶⁴ by Lewontin, a noted evolutionary theorist. He is supposed to have “said that organisms ‘appear to have been carefully and artfully designed,’ He views them as ‘the chief evidence of a Supreme Designer.’”

The question at the bottom of the page further emphasizes Lewontin’s purported view: “What recognition does a zoologist give to design and to its originator?” Now, picture the answer a typical JW at a bookstudy would have given to the question: “Well, as the paragraph shows, Richard Lewontin views the design of organisms as evidence for their being created.”

²⁶¹ <https://corior.blogspot.com/2006/02/part-1-disagreements-about-evolution.html>

²⁶² <https://www.jwfacts.com/pdf/misquotations-in-the-creation-book.pdf> <https://corior.blogspot.com/2006/02/misquotations-in-creation-book.html> https://rationalwiki.org/wiki/List_of_fallacious_creationist_quotes

²⁶³ 1985 edition, ¶ 5, p. 143.

²⁶⁴ “Adaptation”, *Scientific American*, September 1978, p. 213.

For the whole article see http://dynamics.org/~altenber/LIBRARY/REPRINTS/Lewontin_Adaptation.1978.pdf

A check of the *Scientific American* article shows that Lewontin said something very different from what *Creation* claimed. In saying the above things he is alluding, not to his own viewpoint, but to the general viewpoint that scientists in the 19th century had about nature, because most of them were creationists. After describing what had been the general view of how the great variety of life forms came about, and stating that Darwin had tried to account for both its “diversity and fitness”, Lewontin said:

Life forms are more than simply multiple and diverse, however. Organisms fit remarkably well into the external world in which they live. They have morphologies, physiologies and behaviors that appear to have been carefully and artfully designed to enable each organism to appropriate the world around it for its own life.

Lewontin’s point in the overall article was that organisms are *not* designed, but only *appear* or *seem* to have been carefully designed. Clearly referring to the 19th century view, he said:

It **was** the marvelous fit of organisms to the environment, much more than the great diversity of forms, that **was** the chief evidence of a Supreme Designer. Darwin realized that if a naturalistic theory of evolution was to be successful, it would have to explain the apparent perfection of organisms and not simply their variation. [bold added]

The rest of the article shows that Lewontin considered the viewpoint described in the above quotation as erroneous, and that it was corrected by the work of Darwin and his successors in the 20th century. In fact, the article is devoted entirely to demonstrating how the adaptation of an organism to its environment can be explained by natural, not supernatural, mechanisms. The abstract for the article is quite clear: **“The manifest fit between organisms and their environment is a major outcome of evolution.”**

From the November, 2017 JW Broadcasting video:

Splane 2:04: “Now first, what’s the responsibility of the writer of the article? When a writer submits an article for publication, he is expected to supply references from **reputable sources** to back up the fact that he’s included in his article, and our research department will use those references to check the accuracy of everything. **Reliable, respected sources.**”

Splane 2:25: “What do we mean by a reliable source? Well first of all, we go with encyclopedias, books, magazines, and then, newspapers ... **We have to make sure that our sources are reliable.**”

How the misquote of Richard Lewontin came about is both amusing and reprehensible. It turns out that a young-earth creationist working for the Institute for Creation Research wrote an article for a young-earth creationist pamphlet/magazine²⁶⁵ in which he misrepresented Lewontin in almost exactly the same way as the *Creation* book did. A couple of years later, the paranormalist writer Francis Hitching lifted that misrepresentation and presented it in his own book.²⁶⁶ A couple of years after that, the *Creation* book’s author did the same with Hitching’s misrepresentation. This is easy to see, because that author quotes or uses material from Hitching’s book at least thirteen times. See below for details of this sorry affair.

The amusing thing here is that we find a flow of false information like this:

Young-earth creationist → paranormalist → Watch Tower writer

This misrepresentation is similar to what *Creation* did with a quotation from *Popular Science* magazine—see below. Lewontin specifically complained about this practice:

²⁶⁵ “Creation, Selection, and Variation”, *Impact*, No. 88, October 1980, Gary E. Parker, Institute for Creation Research, p. 2.

²⁶⁶ Francis Hitching, *The Neck of the Giraffe*, p. 84.

Partly through honest confusion, but also partly through a conscious attempt to confuse others, creationists have muddled the disputes about evolutionary theory with the accepted fact of evolution to claim that even scientists call evolution into question. By melding our knowledge of what has happened in evolution with our doubts about how this has happened into a single “theory of evolution,” creationists hope to challenge evolution with evolutionists’ own words. Sometimes creationists plunge more deeply into dishonesty by taking statements of evolutionists out of context to make them say the opposite of what was intended. For example, when, in an article on adaptation, I described the outmoded nineteenth-century belief that the perfection of creation was the best evidence of a creator, this description was taken into creationist literature as evidence for my own rejection of evolution. Such deliberate misuse of the literature of evolutionary biology, and the transparent subterfuge of passing off the Old Testament myth of creation as if it were creation “science” rather than the belief of a particular religion, has convinced most evolutionists that creationism is nothing but an ill-willed attempt to suppress truth in the interest of propping up a failing institution. But such a view badly oversimplifies the situation and misses the deep social and political roots of creationism.²⁶⁷

Lewontin made a similar complaint about the practice of misquoting scientists:²⁶⁸

Modern expressions of creationism and especially so-called “scientific” creationism are making extensive use of the tactic of selective quotation in order to make it appear that numerous biologists doubt the reality of evolution. The creationists take advantage of the fact that evolutionary biology is a living science containing disagreements about certain *details* of the evolutionary process by taking quotations about such details out of context in an attempt to support the creationists’ antievolutionary stand. Sometimes they simply take biologists’ descriptions of creationism and then ascribe these views to the biologists themselves! These patently dishonest practices of misquotation give us a right to question even the sincerity of creationists.

It is one thing to cite and describe opposing viewpoints. It is something else again to repeatedly attribute those opposing views to an author or to a publication that merely describes them, especially when it is evident that the description is for the purpose of dismissing it.

It is possible that *Creation* got Lewontin’s statement wrong via poor scholarship rather than outright dishonesty. Apparently the author was too lazy to do his own research, or he might not have mangled the quotation so badly. As shown above, Lewontin’s statement was lifted from paranormalist Francis Hitching’s book *The Neck of the Giraffe*, page 84 (page 65 paperback). Hitching’s quotation of Lewontin is identical to *Creation*’s, but his book was published in 1982, whereas *Creation* was published in 1985. Hitching in turn lifted this from the creationist publication *Impact*, No. 88, October, 1980, from the article “Creation, Selection, and Variation” by Gary E. Parker, a well-known young-earth creationist. On page 2 Parker wrote:

As Harvard’s Richard Lewontin recently summarized it, organisms “... appear to have been carefully and artfully designed.” He calls the “perfection of organisms” both a challenge to Darwinism and, on a more positive note, “the chief evidence of a Supreme Designer.”

See the magazine *Creation/Evolution*, Fall 1981, pages 35-44 for more details.

In 1993, at an International Creation Conference where Parker was a main speaker, after a main lecture, I approached him and asked about his alleged misquotation. He said that he did not really misquote Lewontin—at least that was not his intention when he wrote the *Impact* article—but he was unable to give an explanation. He appeared somewhat embarrassed by the question.

Francis Hitching has also lifted arguments from creationists without attribution. *Impact* was a monthly publication of the Institute for Creation Research (ICR), a six-literal-day creationist, trinitarian organization which would ordinarily be condemned in Watch Tower Society publications. In one

²⁶⁷ *Scientists Confront Creationism*, Laurie R. Godfrey, ed., W. W. Norton & Company, New York, 1983, p. xxiv

²⁶⁸ *Creation/Evolution*, Fall 1981, p. 35

instance, on page 180, footnote 3, *Creation* took its information directly from *Impact*. Arguing that many evolutionists use “the weight of authority” of scientists to get people to believe evolution, *Creation* said:

An example typical of views that often intimidate laymen is this assertion by Richard Dawkins: “Darwin’s theory is now supported by all the available relevant evidence, and its truth is not doubted by any serious modern biologist.” But is this actually the case? Not at all. A little research will reveal that many scientists, including ‘serious modern biologists,’ not[3] only doubt evolution but do not believe it. They believe that the evidence for creation is far, far stronger.

Checking footnote 3 we find that it refers to *Impact*, September 1981, p. ii., which contained an article by Henry M. Morris complaining about Isaac Asimov’s treatment of six-literal-day creationism. It said:

The “prophet” Isaac never mentions the fact that most of the great founding fathers of modern science (e.g., Newton, Pascal, Kelvin, Faraday, Galileo, Kepler, etc.) were theistic creationists, nor that thousands of fully qualified scientists today have repudiated the evolutionary indoctrination of their school days in favor of the much stronger scientific evidences for creation.

So *Creation* uses what is essentially a young-earth creationist, trinitarian religious magazine to make its point. It should be noted that *Impact* did not mention any specific evidence for its claim in the material *Creation* referred to. On page iv., however, it said:

Asimov also makes the arrogant charge that creationist scientists “have not made any mark as scientists.” The fact is that a cross-section of the records of the scientists on the ICR staff, for example, or of the Creation Research Society, would compare quite favorably with those of most secular colleges and universities (including Asimov’s own record).

This statement is misleading at best. Many investigators have found that few creation scientists have done any serious scientific work after becoming associated with the “scientific creationists”. A background check of so-called “creation scientists” shows that many of them have degrees from ‘diploma mills’ or from organizations like the ICR. They often become engrossed, like physicist Robert Gentry (see below), in trying to prove the earth is only six thousand years old. Outfits like the Institute for Creation Research have often misrepresented the credentials of “scientists” on their staff in order to make them look more authoritative than they really are. In actual fact, there are relatively few scientists or serious biologists who do not “believe in evolution”. So *Creation*’s last statement is not true and is based on a statement by a prominent member of “Christendom” which has been demonstrated to misrepresent the credentials of its staff.

What is especially galling to those who respect scholastic honesty is that the *Creation* book’s author completely ignored the fact that his own Writing Department colleagues in 1983 explicitly declared young-earth creationism to be unscientific and unbiblical.²⁶⁹

The above material shows that many of *Creation*’s arguments came from paranormalist Francis Hitching, or young-earth creationists, without attribution. Many of Hitching’s arguments certainly came directly from young-earth creationists, from whom *Creation* borrowed in turn. How many Jehovah’s Witnesses are aware of this connection?

²⁶⁹ *Awake!*, March 8 and 22, 1983.

Partial Correction of the Lewontin Misquote

From the November, 2017 JW Broadcasting video:

Splane 17:20: “When credible research reveals that we have to adjust or tweak a statement that we made in the past, we do so without hesitation. Our goal is to provide information that is as accurate as possible, because we know that you brothers and sisters use this information, you quote it in the field ministry, you use it in your public talks, and so we want to make sure that our brothers are fed with the most accurate spiritual food possible. We’re imperfect, of course, and we are going to make mistakes. And when we do, we have to correct them. Our goal is to do the best we can in all our imperfection.”

From the time of its publication through the next twenty years, the Writing Department received many complaints about the Lewontin misquote, and about a lot of others. Almost nothing was corrected. But in 2004 a slightly revised edition of *Creation* came out, which slightly altered the Lewontin quote. Compare the 1985-2003 and post-2003 versions:

Zoologist Richard Lewontin said that organisms “appear to have been carefully and artfully designed.” He views them as “the chief evidence of a Supreme Designer.”

Evolutionist Richard Lewontin admitted that organisms “appear to have been carefully and artfully designed,” so that some scientists viewed them as “the chief evidence of a Supreme Designer.”

The revised quote is better, in that it does not attribute creationist views to Lewontin. But it still misrepresents Lewontin’s point: that organisms are not designed, but *merely seemed or appeared* to be. But seemed to who? To Lewontin? No. To modern biologists? No. To **19th century** scientists:

It **was** the marvelous fit of organisms to the environment, much more than the great diversity of forms, that **was** the chief evidence of a Supreme Designer. Darwin realized that if a naturalistic theory of evolution was to be successful, it would have to explain the apparent perfection of organisms and not simply their variation.

So even the revised quote misrepresents Lewontin’s view, since it deliberately fails to mention that the view Lewontin was talking about was that of **19th century scientists**, whereas the quote-mined excerpt gives the impression that Lewontin was talking about all scientists down to the present.

Nor does *Creation* fairly describe what Lewontin said about “careful and artful design”. His article took pains explicitly to state that evolutionary adaptation results from natural selection acting on natural variation, resulting in organisms marvelously fit for their environments. Indeed, the very first sentence in the article, in the summary at the top of the page (213), states:

The manifest fit between organisms and their environment is a major outcome of evolution.

According to this, does Lewontin view this “manifest fit” as a product of evolution or of a Supreme Designer? The answer is obvious. So *Creation*’s reviser again misrepresented Lewontin’s views as expressed in his article.

Once again, even in a revision of a misquote, we find a Watch Tower author continuing to misrepresent. Again note the contrast between Watch Tower claims and reality. Remember that Splane said:

Our researchers can examine the quote in context, to make sure that what we’re seeing in print is really what the author of the quote had in mind... For example, an evolutionist might make a statement which, on the surface, appears as to confirm his support of creation... But when you examine the quote in context, you realize that that isn’t what the author had in mind at all. We would never *deliberately* distort a quotation. We try very hard to use all of our quotations in context.

So, Mr. Splane, will you now have a frank talk with your Writing Department and instruct them to mend their ways?

Misrepresentation of *Popular Science* Magazine

From the November, 2017 JW Broadcasting video:

Splane 3:06: “Now, when a writer quotes an expert, our researchers will ask, ‘Who’s this expert? What’s his reputation? Is he working for a particular organization? Does this organization have an agenda? Is it a special interest group?’ If we find that the goals of the organization are questionable, we won’t use the quote, even if it’s a really good quote.”

In this blatant misrepresentation, a young-earth creationist is quoted, but the quotation is made to appear to be from the editors of a “scientific journal”.²⁷⁰ On page 96, *Creation* says:

Before concluding that Bible chronology is in error, consider that radioactive dating methods have come under sharp criticism by some scientists. A scientific journal reported on studies showing that “dates determined by radioactive decay may be off—not only by a few years, but by orders of magnitude.” It said: “Man, instead of having walked the earth for 3.6 million years, may have been around for only a few thousand.”

These statements are extremely misleading on several counts.

First, the reference is to *Popular Science* magazine, which is by no stretch of the imagination a “scientific journal”. Rather, it is a *popular science* journal—rather a different thing. One might just as well refer to *The National Enquirer* as a respected news journal. Referring to *Popular Science* in this way is an attempt to lend “scientific authority” to a publication that has none.

Second, the *Popular Science* article is mostly about the *success* of various dating methods. Only in the last few paragraphs is space given to the views of a single physicist, Robert Gentry, who dissents from the usual view.

Third, the fact that the dissenter is a Seventh-Day Adventist and young-earth creationist²⁷¹ who believes the universe was created in six literal days is not made clear. Gentry even admits that he got his physics degree in order to have a measure of scientific standing to better support his creationist views. Statements from six-literal-day creationists regarding the accuracy of radioactive dating ought to be viewed like claims from Donald Trump that the 2020 U.S. presidential election was stolen from him.

Fourth, the article’s statement that man “may have been around for only a few thousand years” is merely a conclusion the article points out can be drawn from the views of Robert Gentry. It is not a conclusion the magazine itself, using its editorial voice, is making—but *Creation* makes it appear it is.

Fifth, the reader gets the impression the article presents much scientific evidence showing that radioactive dating is on shaky ground. But simply reading the *Popular Science* article shows that the opposite is true.

Here are some excerpts from the article. Judge for yourself whether *Creation* gives a correct view to its readers. Better yet, read the article yourself.

So, today, everything—human artifacts, animal remains, ancient rocks—can be dated fairly accurately. The dates may be off a little, but that’s mainly a matter of impurities in the sample or need to refine techniques, say the scientists involved.

²⁷⁰ “How Old Is It?”, *Popular Science*, by Robert Cannon, November 1979, p. 81.

²⁷¹ https://en.wikipedia.org/wiki/Robert_V._Gentry

Yet major mysteries and curious anomalies remain—the odd speculations advanced by Columbia Union College’s Robert Gentry, for instance.

Physicist Gentry believes that all of the dates determined by radioactive decay may be off—not only by a few years, but by orders of magnitude.

His theory revolves around “halos,” tiny, ringlike discolorations found within coalified wood (wood on its way to becoming coal) and mica, often in the proximity of radioactive uranium or thorium. Some halos can be explained in terms of conventional radioactive decay. Others, known as giant halos, cannot. They’re simply too big to be caused by alpha particles thrown off by known isotopes, and they don’t fit into any accepted theory. If the theory of radioactive decay is weak in one spot, says Gentry, doubt is cast on whatever answers isotopes give you.

Further, when Gentry studies halos in coalified wood, he finds that the uranium/lead ratios are often not at all what they should be. “Since the coalified wood was obtained from deposits supposedly at least tens of millions of years old,” he says, “the ratio between uranium-238 and lead-206 should be low.” They’re not. They’re so high, in fact, that “presently accepted ages may be too high by a factor of thousands.” And man, instead of having walked the earth for 3.6 million years, may have been around for only a few thousand. “The possibility of reducing the 4.5-billion-year history of earth by a factor of a thousand,” he says with some ire, “has not yet been seriously considered.”

Most scientists simply dismiss the idea. As one physicist told me, “You can believe it or not; I don’t.”

“I realize it’s difficult to believe,” counters Gentry. “It would invalidate the whole underlying principle of radioactive dating: that the rates of decay are forever unvarying—an untestable assumption.”

Some research on Robert Gentry turned up the following:²⁷²

Mr. Gentry’s findings were published almost ten years ago and have been the subject of some discussion in the scientific community. The discoveries have not, however, led to the formulation of any scientific hypothesis or theory which would explain a relatively recent inception of the earth or a worldwide flood. Gentry’s discovery has been treated as a minor mystery which will eventually be explained. It may deserve further investigation, but the National Science Foundation has not deemed it to be of sufficient import to support further funding.

It should be evident by now that the *Popular Science* article’s reference to “the odd speculations advanced by ... Robert Gentry” means precisely that. The *Creation* book’s quotation misrepresents the article.

To round out the discussion on Robert Gentry, he wrote a book in 1986 titled *Creation’s Tiny Mystery*, in which he discussed his work on polonium halos. In it he repeated his theory that the granite “basement rocks” of the earth are “the primordial Genesis rocks,” from Precambrian times, and were created instantaneously about six thousand years ago, “by divine fiat”. This is consistent with his religious view as a Seventh-Day Adventist, which religion teaches that the earth was created in six literal 24-hour days. A review of this book²⁷³ showed Gentry’s gross misunderstanding of geology in general. He misidentified calcite rocks as granites and claimed that metamorphism had not occurred in rock samples that were clearly metamorphic. He claimed that granite intrusions cutting across already existing metamorphic rock, which was originally sedimentary rock that had been itself intruded by gabbro rock, were primordial. The Precambrian Canadian Shield is a complex geological area that has been shown by over one hundred years of geological field work to consist of a very large number of diverse kinds of rock, igneous, metamorphic and sedimentary, most of which has undergone subsequent metamorphism. Some of the sedimentary rock even contains stromatolites—ancient bacterial mats that are very rare today. Gentry claimed that the entire mass was created in one day, and God created it to

²⁷² David B. Wilson, *Did the Devil Make Darwin Do It?*, p. 216.

²⁷³ *Creation/Evolution*, vol. 22, Winter 1987-1988, pp. 13-33, National Center for Science Education, Berkeley, California.

have merely the appearance of age, thereby fooling thousands of geologists. Gentry makes it extremely clear that he wrote his book for religious reasons, not scientific ones.

In any case, Gentry's claims about polonium halos have been refuted many times by scientists.²⁷⁴

It is clear that Gentry will interpret scientific data in whatever way lends support to his preconceived notion of six-literal-day creation. This is precisely what the Watch Tower Society does with all data to support its preconceived ideas on science, religion, and pretty much every topic it touches.

Conclusion on the *Creation* Book

Playing loose with truth via dishonest quoting practices, as the *Creation* book perfectly illustrates, opens the door to ridicule, as the following opinion by author Alan Rogerson shows:²⁷⁵

A long acquaintance with the literature of the Witnesses leads one to the conclusion that they live in the intellectual 'twilight zone.' That is, most of their members, even their leaders, are not well educated and not very intelligent. Whenever their literature strays onto the fields of philosophy, academic theology, science or any severe mental discipline their ideas at best mirror popular misconceptions, at worst they are completely nonsensical.

On a computer news network some years ago, one person, replying to a Jehovah's Witness who tried to explain that *Creation* did not mislead people, said:

The JW's and I simply have different notions of Christian responsibility toward truth. A Creationist who writes a book and quotes scientists has the responsibility to ensure that he does not misrepresent the quoted people. Some of the excerpts offered in this group have included strong protests from the quoted scientists, who were angered at the suggestion that they endorse the creationist ideas of the JW's.

I believe that Christianity includes a duty to insist on careful attention to all details, to ensure that all quotes and citations of authorities are accurate and in keeping with the intent of the authors—in sum, to ensure that everything reasonable is done to prevent misleading people. It is clear to me from both official Watchtower publications and statements by JW's on the net that the JW religion has no such devotion to truth; instead of taking responsibility for misleading people, everybody denies that those quotes are misleading. Instead of offering people a chance to review intended quotes before publication, Watchtower writers chop quotes out of context and select only certain phrases.

No group of people will ever be 100% perfect in what they publish; but the reaction to some of the more glaring errors mentioned during the last few weeks speaks volumes. In some cases, it is claimed that there isn't really an error at all. In others, no response is given at all—nothing.

I believe the actions of the Watchtower, and the reactions we've seen here (both refusing to accept blame for some problems, and complete silence on others) are not appropriate for Christians; this is one of my basic philosophical disagreements with the JW's. As it seems unlikely we can resolve our differing opinions about Christian responsibility, further discussion is probably worthless.

Above I cited Job 13:7, 12:

Are you defending God with lies? Do you make your dishonest arguments for his sake?
Your platitudes are as valuable as ashes. Your defense is as fragile as a clay pot.

Matthew 18:6 says:

Whoever stumbles one of these little ones who have faith in me, it would be better for him to have hung around his neck a millstone that is turned by a donkey and to be sunk in the open sea.

²⁷⁴ cf. <http://www.talkorigins.org/faqs/po-halos/gentry.html> <https://www.youtube.com/watch?v=sPSak--gFIU>

²⁷⁵ *Millions Now Living Will Never Die: A Study of Jehovah's Witnesses*, p. 116.

The actions of Watch Tower writers, in contrast to David Splane's claims, prove that they don't actually believe the very Bible they say they're teaching and defending. Nor do the Governing Body members who direct them. There is a word for that.

Book *The Bible—God’s Word or Man’s?* 1989

This book is the Watch Tower Society’s latest and last attempt to produce a book-length defense of its title subject. It contains most of the Society’s traditional arguments, often fleshing them out with relatively new quotations from source references. Unfortunately, the book suffers from the usual plethora of bad arguments, misrepresentations, misquotes, etc.

This paper contains several sections that debunk a number of the arguments given in this book. I’ll point them out as we go along. The present section focuses on the Watch Tower’s handling of science in the *God’s Word* book. Bolded section headings generally follow the book’s usage.

Chapter 8: “Science: Has It Proved the Bible Wrong?”

While this chapter makes a few good points, many of its arguments were debunked long ago. Most arguments are false and easily disproved. Here I will deal with some of the most egregiously bad arguments. An older and more thorough debunking can be found online.²⁷⁶ Section headings are mostly from the *God’s Word* book itself.

Initial Remarks

The chapter begins with this paragraph:

It is widely held today that the Bible is unscientific, and some point to Galileo’s experiences to prove it. But is this the case? When answering that question, we have to remember that the Bible is a book of prophecy, history, prayer, law, counsel, and knowledge about God. It does not claim to be a scientific textbook. Nevertheless, when the Bible does touch on scientific matters, what it says is completely accurate.

Actually the Bible is wildly inaccurate in some scientific matters. For example, the order of creation given in Genesis is mostly wrong. See page 145 of this paper for proof.

Our Planet Earth

2 Consider, for example, what the Bible says about our planet, the earth. In the book of Job, we read: “[God] is stretching out the north over the empty place, hanging the earth upon nothing.” (Job 26:7) Compare this with Isaiah’s statement, when he says: “There is One who is dwelling above the circle of the earth.” (Isaiah 40:22) The picture conveyed of a round earth ‘hanging upon nothing’ in “the empty place” reminds us strongly of the photographs taken by astronauts of the sphere of the earth floating in empty space.

See pages 294 and 306 for detailed refutations of these claims. Briefly, the word translated “circle” in Isaiah 40:22 literally means *circle*, i.e., a flat, *two-dimensional* object like a pizza pie. It does not mean sphere or ball, and in the Old Testament and other ancient Hebrew literature *only* refers to a circle. The phrase in Job 26:7 that God “hangs the earth on nothing” is a parallel of the picture in Genesis 1 of God creating the concrete earth, or land, out of the formless waste of primeval waters. The earth/land is hanging on “no thing” in the midst of the nothingness of these primeval waters (see page 297 for pictures) but is held in its place in the nothingness by God’s power. Claiming that Job means that the earth is a sphere hanging in outer space (of which the Bible writers had no conception) is deliberately misreading the text in order to apply modern scientific concepts to the ancient texts. These are completely circular claims.

²⁷⁶ <https://www.critiquesonthewatchtower.org/old-articles/2006/02/science-has-it-proved-bible-wrong.html>

5 Perhaps even more remarkable is the Bible's insight into the history of mountains. Here is what a textbook on geology says: "From Pre-Cambrian times down to the present, the perpetual process of building and destroying mountains has continued... Not only have mountains originated from the bottom of vanished seas, but they have often been submerged long after their formation, and then re-elevated." [2] Compare this with the poetic language of the psalmist: "With a watery deep just like a garment you covered [the earth]. The waters were standing above the very mountains. Mountains proceeded to ascend, valley plains proceeded to descend—to the place that you have founded for them."—Psalm 104:6, 8.

Footnote 2 references *The Book of Popular Science* (Grolier, Inc., 1967, pp. 213, 214), but the *God's Word* book was published in 1989. From the 1950s through the early 1970s the ideas of plate tectonics²⁷⁷ were established firmly in geology, and it is clear that the 1967 edition of the Grolier series (a set of 10 books covering a multitude of topics) had not yet incorporated plate tectonics into its coverage of geology. Rather, it contained old, outdated and inaccurate information about the formation of mountains. By 1989 the Society was well aware of plate tectonics,²⁷⁸ so there was no excuse for the author to quote from an outdated book. Obviously his goal was not to provide accurate information, but to connect a sciency quote with Psalm 104 to give the impression to naïve readers that he had proved his point.

Paragraph 5 gives the impression that mountains quickly pop up and down with no apparent rhyme or reason, and the author reinforces that with Psalm 104: mountains ascend and valleys descend. But that is an exceedingly oversimplified and misleading picture, especially because no time scale is given. The fact is that, as the earth's tectonic plates move around over hundreds of millions of years, they slowly nudge one another, moving at a rate about equal to the growth of fingernails. At the regions of contact where two plates move in opposition to one another, mountain ranges are usually pushed up. For example, as the African plate gradually moved northward against the Eurasian plate over the past hundred million years, it closed the ancient Tethys Sea, pushed up the Alps and left today's Mediterranean basin as a tiny remnant of the old Sea. That is why the Alps contain marine fossils high up in the rocks of the mountains: tens of millions of years ago the region was sea bottom, but the African plate's movement pushed up the bottom as much as ten thousand meters. The famous Matterhorn's top third is a chunk of African plate, while the bottom part is Eurasian plate. Similarly, over the past 20 million years India has moved northward, crashing into Asia and pushing up the Himalayas. Similar processes have occurred repeatedly at the western edges of the American continents, pushing up the Rocky Mountains several times, and more recently the Cascade and Andes Mountains.

Furthermore, using Psalm 104:5-9 here is extremely problematic, because the Bible sometimes refers to mountains ascending and valleys descending with reference to the creation of the earth, and sometimes to Noah's Flood. Note what the passage says:

5 He has established the earth on its foundations; It will not be moved from its place forever and ever. 6 You covered it with deep waters as with a garment. The waters stood above the mountains. 7 At your rebuke they fled; At the sound of your thunder they ran away in panic 8 —Mountains ascended and valleys descended—to the place you established for them. 9 You set a boundary that they should not pass, That they should never again cover the earth.

Clearly this passage can be made to fit either the Genesis creation or Flood accounts. Accordingly, the Society has argued both ways—but never at the same time. The Society's avoidance of this problematic ambiguity shows that its writers are well aware of the problems, and want to avoid any mention of them.

²⁷⁷ https://en.wikipedia.org/wiki/Plate_tectonics

²⁷⁸ see *Awake!*, January 8, 1988, p. 31; September 8, 1986, p. 29; July 8, 1982, p. 14; June 22, 1977, pp. 19-21.

Psalm 104 is problematic in other ways. Verse 5 indicates that the earth has foundations and cannot move. 1 Chronicles 16:30 confirms this: “The earth is firmly established; it cannot be moved.” Psalm 93:1 says the same: “The earth is firmly established; It cannot be moved.” And Psalm 96:10: “The earth is firmly established, it cannot be moved.” Job 38:6 also confirms the basic idea: “Into what were its pedestals sunk, Or who laid its cornerstone?” Psalm 119:90 states: “You have solidly fixed the earth, that it may keep standing.” Yet we know that the earth rotates on its axis such that the equator is moving eastward at about 1700 kilometers per hour, it is circling the sun at more than 100,000 kilometers per hour, our solar system revolves around the center of the Milky Way galaxy at about 200 kilometers per second, and the galaxy is moving at about 300 kilometers per second.²⁷⁹ So how is it that the earth “cannot be moved”? Of course, someone might argue that these passages are just using poetic language, and refer to the permanence of the earth. But if so, Psalm 104 cannot be claimed to describe the physical situation of the earth, and the *God’s Word* book’s argument is nullified. The author hypocritically used Psalm 104 as if it were both literal and poetic.

Now, from basic geology we know that today’s mountain ranges are millions of years old, so they could not have formed shortly after Noah’s Flood 4,400 years ago. Thus they were about as high back then as they are today, and this makes Noah’s Flood impossible because there is not anywhere nearly enough water on the earth to flood it to the 8,800 meter depth needed to cover Mt. Everest. Keep this in mind with respect to the material discussed below.

What Does the Bible Say?

12 If the Bible is so accurate in scientific fields, why did the Catholic Church say that Galileo’s teaching that the earth moved around the sun was unscriptural? Because of the way the authorities interpreted certain Bible verses.⁶ Were they correct? Let us read two of the passages they quoted and see.

13 One passage says: “The sun rises, the sun sets; then to its place it speeds and there it rises.” (Ecclesiastes 1:5, *The Jerusalem Bible*) According to the Church’s argument, expressions such as “the sun rises” and “the sun sets” mean that the sun, not the earth, is moving. But even today we say that the sun rises and sets, and most of us know that it is the earth that moves, not the sun. When we use expressions like these, we are merely describing the apparent motion of the sun as it appears to a human observer. The Bible writer was doing exactly the same.

This is an easy enough rationalization, and I doubt that anyone besides extreme biblical literalists, like some people who believe in a flat earth, would argue with it. However, it remains true that the Bible gives no indication that the sun and moon actually move around the earth and that the passage is “merely describing the apparent motion of the sun as it appears to a human observer.”

The next paragraph is not rationalized so easily.

14 The other passage says: “You fixed the earth on its foundations, unshakeable for ever and ever.” (Psalm 104:5, *The Jerusalem Bible*) This was interpreted to mean that after its creation the earth could never move. In fact, though, the verse stresses the permanence of the earth, not its immobility. The earth will never be ‘shaken’ out of existence, or destroyed, as other Bible verses confirm. (Psalm 37:29; Ecclesiastes 1:4) This scripture, too, has nothing to do with the relative motion of the earth and the sun. In Galileo’s time, it was the Church, not the Bible, that hindered free scientific discussion.

But the above-quoted passages saying that the earth cannot be moved give no hint that they are stressing the permanence of the earth as opposed to its immobility, except by transparent rationalization using hindsight given by modern science. Indeed, various Bible passages speak of the earth resting on

²⁷⁹ <https://www.forbes.com/sites/startwithabang/2017/06/16/how-does-earth-move-through-space-now-we-know-on-every-scale/>

pillars, having “socket pedestals” and a foundation (see page 305). So we have here an excellent example of rationalization driven by the realities of modern science, and by interpreting ancient literature according to the understanding of modern science. Hebrew readers of 2,500 years ago would have given a blank look if told that outer space exists and the earth is moving through it at hundreds of kilometers a second.

Evolution and Creation

15 There is, however, an area where many would say that modern science and the Bible are hopelessly at odds. Most scientists believe the theory of evolution, which teaches that all living things evolved from a simple form of life that came into existence millions of years ago. The Bible, on the other hand, teaches that each major group of living things was specially created and reproduces only “according to its kind.” Man, it says, was created “out of dust from the ground.” (Genesis 1:21; 2:7) Is this a glaring scientific error in the Bible? Before deciding, let us look more closely at what science knows, as opposed to what it theorizes.

16 The theory of evolution was popularized during the last century by Charles Darwin. When he was on the Galápagos Islands in the Pacific, Darwin was strongly impressed by the different species of finches on the different islands, which, he deduced, must all have descended from just one ancestral species. Partly because of this observation, he promoted the theory that all living things come from one original, simple form. The driving force behind the evolution of higher creatures from lower, he asserted, was natural selection, the survival of the fittest. Thanks to evolution, he claimed, land animals developed from fish, birds from reptiles, and so forth.

17 As a matter of fact, what Darwin observed in those isolated islands was not out of harmony with the Bible, which allows for variation within a major living kind. All the races of mankind, for example, came from just one original human pair. (Genesis 2:7, 22-24) So it is nothing strange that those different species of finches would spring from a common ancestral species. But they did remain finches. They did not evolve into hawks or eagles.

These last sentences illustrate the complete misunderstanding of evolution common to creationists. The basic problem is the time scale, along with the fact that there are no obvious limits to the amount of change possible within populations of creatures. When sufficient change has accumulated and enough mutations have occurred to prevent interspecies fertility, then there are new species, new “kinds”.

18 Neither the various species of finches nor anything else Darwin saw proved that all living things, whether they be sharks or sea gulls, elephants or earthworms, have a common ancestor. Nevertheless, many scientists assert that evolution is no longer just a theory but that it is a fact. Others, while recognizing the theory’s problems, say that they believe it anyway. It is popular to do so. We, however, need to know whether evolution has been proved to such an extent that the Bible must be wrong.

The author ignores the 130 years of progress in paleontology and so forth that occurred from Darwin’s time to his own. Darwin did not know a great many things that are common scientific knowledge today. Huge numbers of fossils are now known, and genetics has proceeded so far that we can now examine complete genetic sequences, almost all of which confirm earlier proposed lines of descent gleaned from the fossil record. These two independent lines of evidence provide extremely solid confirmation that the fundamentals of evolution are true—as close to facts as it is possible to get in science. So, arguing that Darwin got some things wrong is a red herring.

Is It Proved?

19 How can the theory of evolution be tested? The most obvious way is to examine the fossil record to see if a gradual change from one kind to another really happened. Did it? No, as a number of scientists honestly admit.

False. This claim rests on the fact that Darwin’s *original* theory posited gradual evolution only, whereas the modern view is that evolution can occur at rates from very gradual to relatively sudden

spurts (punctuated equilibrium). The fossil record bears this out, showing in some cases evolution over tens of millions of years so gradual that paleontologists can find no clear line of demarcation between slightly different forms as they go upward in the sedimentary layers, and in other cases remarkably rapid evolution over a few tens of thousands of years. There are also instances where a species once distributed over a region became separated into isolated populations, which then diverged into separate species but were not fossilized. Some became extinct, leaving one or a few daughter species. Due to spotty fossilization only the original and final daughter species have been unearthed, giving the impression of a sudden change from one type to another.

The claim also rests on several misconceptions originated by young-earth creationists. The fossil record contains a wide variety of evidence about gradual versus relatively sudden changes in populations. Sometimes there are long periods of gradual change, sometimes periods of relative stasis followed by extinction and then replacement by other species, and sometimes a combination of both. The way to understand this is to read material by real scientists—not creationists—and look at the actual evidence rather than the straw men usually set forth by creationists. For example, a book by paleontologist Donald Prothero sets forth a great deal of fossil evidence showing these facts.²⁸⁰ There are plenty of other resources on this. Further parts of this paper provide copious references.

The author's argument is like someone discovering a batch of photographs in an abandoned house that document the growth of the former occupant's children, and because the photos show the children at discrete moments in time, concluding that those children could not possibly have grown up, because there are no photos showing gradual change. Stupid? Yes.

One, Francis Hitching, writes:

Francis Hitching is not a scientist. Rather, he is a paranormalist, and has written a number of books with paranormalist themes. He has written on Mayan pyramid energy and for some "In Search Of..." episodes on BBC television (similar to the sensational "Unsolved Mysteries" on American television). He apparently accepts evolution, but believes it to be directed by some sort of cosmic force. The reference work *Contemporary Authors*, Vol. 103, page 208, lists him as a member of the Society for Psychical Research, the British Society of Dowsers and the American Society of Dowsers. His writings include: *Earth Magic*; *Dowsing: The Psi Connection*; *Mysterious World: An Atlas of the Unexplained*; *Fraud, Mischief, and the Supernatural* and *Instead of Darwin*. The author of *God's Word* quotes from Hitching's book *The Neck of the Giraffe* which spends much of its time attacking Darwinian evolution, borrowing heavily and uncritically from young-earth creationists. Several of Hitching's references are lifted directly from creationist literature rather than being quoted from their original sources. Some young-earth creationists have complained that Hitching plagiarized their material.

"When you look for links between major groups of animals, they simply aren't there."⁷ So obvious is this lack of evidence in the fossil record that evolutionists have come up with alternatives to Darwin's theory of gradual change.

This is a flat-out lie. The author creates a straw man and then argues against it, rather than against the actual theory of evolution. The straw man consists of setting up *Darwin's* ideas of strictly gradual evolution as if modern scientists held to them until they were forced to change, and then giving a vague reference to "alternatives to Darwin's theory" (obviously the "punctuated equilibrium" notion of biologist Stephen Jay Gould et al. But as mentioned above, the fossil record contains sequences of change ranging from almost nonexistent to very large and rapid. All that one need do to see this is to

²⁸⁰ Donald Prothero, *Evolution: What the Fossils Say and Why It Matters*, 2nd edition.

read Donald Prothero's book, or any other comprehensive book on paleontology. There are plenty of online resources, too, such as the talkorigins website.²⁸¹

The truth is, though, that the sudden appearance of animal kinds in the fossil record supports special creation much more than it does evolution.

Only when most details of the fossil record are ignored. See the sections on evolution and the fossil record on pages 59, 312, and 339 for more on this.

20 Moreover, Hitching shows that living creatures are programmed to reproduce themselves exactly rather than evolve into something else. He says: "Living cells duplicate themselves with near-total fidelity. The degree of error is so tiny that no man-made machine can approach it. There are also built-in constraints. Plants reach a certain size and refuse to grow any larger. Fruit flies refuse to become anything but fruit flies under any circumstances yet devised."⁸ Mutations induced by scientists in fruit flies over many decades failed to force these to evolve into something else.

So many inaccuracies in one paragraph! Hitching does not *show* anything; rather, he *claims* various things, and does so largely on the basis of young-earth creationist arguments. The *God's Word* author completely ignores Hitching's mention of duplication of cells "with *near*-total fidelity". That "near-total" is the key to evolution: mutations and various other changes in the genes provide the fodder for evolutionary change, but it usually occurs over millions of years, not decades. Hitching gives no actual evidence for "built-in constraints" aside from the observation that over very short periods of time (a few decades are miniscule on the scale of millions of years) living things do not change all that much. No scientist or creationist has ever demonstrated a limit on the amount of genetic change possible.

The Origin of Life

21 Another thorny question that evolutionists have failed to answer is: What was the origin of life? ...

Yet another instance of a Watch Tower author falsely conflating evolution and abiogenesis. This is covered in detail on page 83 of this paper.

Why Not Creation

24 Despite the problems inherent in the theory of evolution, belief in creation is viewed today as unscientific, even eccentric. Why is this? Why does even an authority such as Francis Hitching, who honestly points up the weaknesses of evolution, reject the idea of creation?¹¹

Paranormalist Francis Hitching is an *authority* on evolution? This statement alone proves the gross incompetence of the author of the *God's Word* book. As mentioned above, Hitching believes evolution to be directed by some sort of paranormal cosmic force that he cannot identify.

Michael Denton explains that evolution, with all its failings, will continue to be taught because theories related to creation "invoke frankly supernatural causes."¹² In other words, the fact that creation involves a Creator makes it unacceptable. Surely, this is the same kind of circular reasoning that we met up with in the case of miracles: Miracles are impossible because they are miraculous!

Talk about missing the boat! Denton has long been a religious creationist, and his objection to evolution is mainly because of that. Many science writers and science books have long since debunked Denton's arguments, not based on any objection to creationism per se, but because Denton's science

²⁸¹ <http://www.talkorigins.org/faqs/faq-transitional.html> <http://www.talkorigins.org/faqs/comdesc/>
<http://www.talkorigins.org/indexcc/CC/CC200.html>

was bad.²⁸² The Watch Tower author totally misunderstands why science does not allow miraculous causes: doing science would be impossible if they were permitted, because all scientific mysteries could be ‘solved’ merely by saying “God did it.” This claim is virtually useless.

Isaac Newton threw aside his “God did it” inclinations when he came up with his theory of gravity. He understood that there was some kind of force that acted to pull all objects with mass together, and he figured out the mathematical equation that describes that pull. His religious beliefs told him that God had created that force, but not that God was pulling the strings to make it work on an everyday basis. No scientist, not even Newton, ever thought that there is no such thing as the force of gravity but that God miraculously pushes all massive objects toward one another. This applies in spades to Einstein’s theory of General Relativity.

25 Besides, the theory of evolution itself is deeply suspect from a scientific viewpoint. Michael Denton goes on to say: “Being basically a theory of historical reconstruction, [Darwin’s theory of evolution] is impossible to verify by experiment or direct observation as is normal in science...”

By that argument, all forensic science must be invalid, because it is entirely based on historical reconstruction. There goes the criminal justice system!

Moreover, the theory of evolution deals with a series of unique events, the origin of life, the origin of intelligence and so on. Unique events are unrepeatable and cannot be subjected to any sort of experimental investigation.¹³

Wrong again. The Theory of Evolution deals with how populations of living organisms change through time. The origin of life—abiogenesis—has nothing to do with that theory. But historical events most certainly can be subjected to the kind of experimentation fundamental to forensic science. Predictions can be made of what will be further found. If those predictions are born out by new discoveries, then those parts of the developing theory are on the right track.

A good example of such prediction is found in the 2004 discovery of the fossil named *Tiktaalik* on Ellesmere Island in Canada.²⁸³ This creature had features intermediate in structure between earlier fish and later tetrapods. Paleontologist Neil Shubin, leader of the team that discovered it, had predicted that something like it would be found in sedimentary strata about 375 million years old (375 Ma), based on the known age of the latest known unequivocal fish (380 Ma) and the earliest known tetrapods (365 Ma). Shubin researched where he could find strata of the right age and found that certain areas on Ellesmere Island fit the bill. So in 2000 his team began making trips to the Arctic to try to find what they predicted. After five seasons they hit paydirt with *Tiktaalik*. This is forensic science at its best, and it gives the lie to claims like Denton’s and the Watch Tower author’s that “historical reconstruction is impossible to verify by experiment or direct observation.” Shubin’s book *Your Inner Fish*²⁸⁴ is an informative and entertaining look at a variety of paleontological subjects, including Shubin’s discovery of *Tiktaalik*.

The truth is that the theory of evolution, despite its popularity, is full of gaps and problems.

That is true of all scientific theories. No such theory can ever be complete because humans are not able to discover all of the knowledge in the universe. But incompleteness does not imply that the theories are wrong. The Theory of Gravity, Atomic Theory, Germ Theory and so forth will never be absolutely complete, but they are entirely workable and, so far as anyone can tell, give extremely credible explanations about their subjects.

²⁸² cf. <http://www.talkorigins.org/faqs/denton.html>

²⁸³ <https://en.wikipedia.org/wiki/Tiktaalik>

²⁸⁴ Neil Shubin, *Your Inner Fish: A Journey Into the 3.5-Billion-Year History of the Human Body*.

It gives no good reason to reject the Bible's account of the origin of life.

Once again, the Theory of Evolution says nothing about the origin of life. But all that the Bible account says is that "God did it." That is not science in any way.

The first chapter of Genesis provides a completely reasonable account of how these "unrepeatable" "unique events" came about during creative 'days' that stretched through millenniums of time.

Wrong. Genesis 1 has most events of the 'creative days' wrong in some way: wrong event, out of order, etc. See page 145 for the facts.

What About the Flood?

26 Many point to another supposed contradiction between the Bible and modern science. In the book of Genesis, we read that thousands of years ago the wickedness of men was so great that God determined to destroy them.

God could have destroyed them in the same way that his angel destroyed 185,000 Assyrians, without all the theatrics and huge amounts of collateral damage of a global flood. Why would God go to all that trouble?

However, he instructed the righteous man Noah to build a large wooden vessel, an ark. Then God brought a flood upon mankind. Only Noah and his family survived, together with representatives of all the animal species. The Flood was so great that "all the tall mountains that were under the whole heavens came to be covered."—Genesis 7:19.

As I mentioned above, there are two alternatives about the age of mountains with respect to the Flood: (1) they are older than the Flood; (2) they are younger than the Flood. The Society dates the Flood to 2370 BCE. Geology proves that mountains are many millions of years old, which immediately eliminates (2). But geology also proves that mountains were about as high before 2370 BCE as they are today, which requires that enough water would have been in the Flood to cover Mt. Everest and the rest of the Himalayas, the Andes, the Rockies, etc. Anyone who objects that all these mountain ranges might have been pushed up much higher during or after the Flood does not understand the facts of geology: India drifted northward for some 50 million years (its track in the Indian Ocean is clearly visible in topographic maps²⁸⁵), and about 20 million years ago crashed into Asia. The Himalayas were pushed up; mountain ranges were formed in Iran to the west and southeast Asia to the east.²⁸⁶

The fact is that there is a wealth of evidence that shows that a worldwide flood could not have happened anytime in the past few million years. There are continuous historical records from Egypt and China that go right through the time that the Flood occurred according to Watch Tower chronology. The entire science of geology would have to be thrown out if geologists were so incompetent that they managed to misinterpret the evidence so badly. Let's take a single example:

As Watch Tower publications have noted, if the earth were completely smoothed out, the oceans would cover it to a depth of about 8,000 feet (2,400 meters). That sets a limit of about 8,000 feet for the height of the highest mountains that could be covered by floodwaters. But we have plenty of mountain ranges much higher than that. Accordingly, all of the earth's high mountain ranges must have formed *after* the Flood. The Himalayas, the Andes, the Rockies and many more can be only a few thousand years old. However, much evidence proves that such mountains are millions of years old. What actual evidence has the Society given for its claims about the height of mountain ranges? Not a thing.

²⁸⁵ https://imgc.artprintimages.com/img/print/1967-indian-ocean-floor-map_u-l-p6xcid0.jpg?h=550&w=550

²⁸⁶ <https://www.geolsoc.org.uk/Plate-Tectonics/Chap3-Plate-Margins/Convergent/Continental-Collision>
<http://www.pbs.org/wnet/nature/the-himalayas-tectonic-motion-making-the-himalayas/6342/>
<https://pubs.usgs.gov/gip/dynamic/himalaya.html> https://en.wikipedia.org/wiki/Indian_Plate

Consider also the Big Island of Hawaii. This is the largest single mountain in the world measured from its base on the floor of the Pacific Ocean. It is about 33,000 feet high above the seafloor and 120 miles across. It is about a million years old, but is only the youngest in a chain of volcanoes extending northwestward all the way to the Kamchatka peninsula, thousands of miles away. Some of these have been worn down to nubs and sunk into the ocean, becoming seamounts. If the Big Island existed prior to the Flood, then it would have stuck up anywhere from two to four miles higher than sea level. The alternative is that this giant mass of lava grew from almost nothing to the largest mountain in the world in under about 3,000 years! And that the dozens of sister volcanoes in the Hawaiian chain grew up and eroded right down to sea level! Once again, no evidence is forthcoming from the Society that such a thing could have occurred. The *God's Word* author probably is completely unaware of such problems. The alternative is worse: he is aware but has deliberately ignored them.

27 Where did all the water come from to cover the whole earth? The Bible itself answers. Early in the creation process, when the expanse of the atmosphere began to take shape, there came to be "waters ... beneath the expanse" and "waters ... above the expanse." (Genesis 1:7; 2 Peter 3:5) When the Flood came, the Bible says: "The floodgates of the heavens were opened." (Genesis 7:11) Evidently, the "waters ... above the expanse" fell and provided much of the water for the inundation.

The notion of a 'vapor canopy above the expanse' containing enough water to flood the earth was debunked on page 11. Note the usual things that Watch Tower writers get wrong: the 'expanse' was not the 3-dimensional atmosphere but merely the 2-dimensional sky as viewed from the ground. There was no place for water to be *in*, in the sky. The 'waters beneath the expanse' were either the oceans (which do not contain enough water to flood the earth to a depth greater than about 8,000 feet even if the entire surface of the earth were evened out) or the 'primeval waters' that supposedly continued to envelop the sky/earth structure after its creation (see page 297). So, given the physical realities, there is no reasonable source for the waters of Noah's Flood.

Of course, one might argue that God can do anything, and so he might have created all that extra water just for the Flood, and then zapped it out of existence after the Flood was to be over. But that is transparent special pleading and simply stupid. If God had to go to that much trouble, why not just kill off the earth's wicked human inhabitants and be done with it? After all, just one angel is supposed to have killed 185,000 Assyrian soldiers in one night.

The problem remains: where did the Flood water go, assuming it dissipated by non-miraculous physical processes? Since even Watch Tower writers do not explicitly argue that all of today's mountain ranges sprang up in the last 4,400 years, the Flood must have been at least 30,000 feet deep to drown Mt. Everest, as shown above. But today's oceans contain only about a third of that volume of water. Where is it? Does one have to resort to the ridiculous claim that God miraculously zapped it out of existence?

28 Modern textbooks are inclined to discount a universal flood. So we have to ask: Is the Flood just a myth, or did it really happen? Before answering that, we should note that later worshipers of Jehovah accepted the Flood as genuine history; they did not regard it as a myth. Isaiah, Jesus, Paul, and Peter were among those who referred to it as something that really happened. (Isaiah 54:9; Matthew 24:37-39; Hebrews 11:7; 1 Peter 3:20, 21; 2 Peter 2:5; 3:5-7) But there are questions that have to be answered about this universal Deluge.

In view of the physical facts briefly touched on above, a global Flood 4,400 years ago is not possible.

The Floodwaters

29 First, is not the idea of the whole earth's being flooded too farfetched? Not really. Indeed, to some extent the earth is still flooded. Seventy percent of it is covered by water and only 30 percent is dry land.

So what? The point is how much *difference* there was 4,400 years ago between the highest and lowest elevations. Given that mountains as high as 30,000 feet existed back then, one cannot get the volume of today's oceans to cover them.

Moreover, 75 percent of the earth's fresh water is locked up in glaciers and polar ice caps. If all this ice were to melt, the sea level would rise much higher. Cities like New York and Tokyo would disappear.

Again, so what? Sea level would rise roughly 200-300 feet.

30 Further, The New Encyclopædia Britannica says: "The average depth of all the seas has been estimated at 3,790 metres (12,430 feet), a figure considerably larger than that of the average elevation of the land above the sea level, which is 840 metres (2,760 feet). If the average depth is multiplied by its respective surface area, the volume of the World Ocean is 11 times the volume of the land above sea level."¹⁴ So, if everything were leveled out—if the mountains were flattened and the deep sea basins filled in—the sea would cover the whole earth to a depth of thousands of meters.

Just as I said above. But again, the point is not about the *average* elevations or depths, but the *peaks*.

31 For the Flood to have happened, the pre-Flood sea basins would have to have been shallower, and the mountains lower than they are now. Is this possible?

No. I covered this above. The Himalayas began to form about 20 million years ago and have risen steadily ever since. Plate tectonics combined with various dating methods show that the ocean basins range from 100 to 200 million years old, and have been at roughly the same depth for all that time.

The author next engages in gross misrepresentation of a source reference to imply that mountains are much younger than geology indicates, and that in fact, all really high mountains are younger than the 4,400 years required by the Watch Tower Society's timetable for the Flood.

Well, one textbook says: "Where the mountains of the world now tower to dizzy heights, oceans and plains once, millions of years ago, stretched out in flat monotony... The movements of the continental plates cause the land both to rear up to heights where only the hardiest of animals and plants can survive and, at the other extreme, to plunge and lie in hidden splendor deep beneath the surface of the sea."¹⁵ Since the mountains and sea basins rise and fall, it is apparent that at one time the mountains were not as high as they are now and the great sea basins were not as deep.

Footnote 15 references the book *Wonders of Nature* (edited by Claus Jürgen Frank, 1980, p. 87). Contrary to the Watch Tower author's claim, it is not a textbook, but a coffee table book. It contains many beautiful pictures of nature, but the accuracy of its statements about nature sometimes plays second fiddle to the photos. The author's claim that this is a *textbook* is yet another proof of either his gross incompetence or his desire to make his references sound more authoritative than is warranted.

At any rate, the quoted material is basically an artsy introduction to the formation of mountain ranges such as the Alps, and in context is not to be taken as entirely accurate. Because it is taken out of context, it is simply wrong as quoted. While it is certainly true that the movements of tectonic plates cause mountains to rise up from land or sea as the underlying crust buckles upward (other processes also occur), the reverse does not occur. Rather, after mountains have risen, erosion planes them down toward sea level; they and the land they are on do not "plunge and lie in hidden splendor deep beneath

the surface of the sea.” Ocean basins either have existed as long as the earth has existed, or form when large continental land masses comprised of one or more tectonic plates split along nascent plate boundaries and separate, with the region between the plates expanding laterally at what become mid-ocean ridges. At these ridges, new oceanic crust forms as rising magma fills cracks in the ridges and solidifies.²⁸⁷ That is today’s structure of the ocean bottom in the Atlantic Ocean, where during the past 200 million years the Americas split from Eurasia and Africa, separating at the huge undersea mountain range called the Mid-Atlantic Ridge. In several later sections, *Wonders of Nature* clarifies what it is talking about by providing context for its artsy introduction. These clarifications completely disprove the *God’s Word* book’s author’s claims, which is likely why he quoted out of context.

For example, a couple of pages farther on (pp. 90-91), in amongst photos of alpine panoramas, *Wonders of Nature* describes the Alps as having existed far longer than the 4,400 years allowed by the *God’s Word* book’s author:

The Alps have to thank primarily the Ice Ages of the most recent geological past for their present character. One million years ago, the region that is now occupied by the Alps was covered by huge ice-caps that pushed massive tongues of ice outward into the foreland; river-valleys were deepened here by the gouging action of the glaciers as they advanced. With their retreat at the end of the Ice Age, numerous lakes—Constance, Geneva or Garda, for example—were left behind in the valleys as accumulations of meltwater... The Alps are subdivided and carved up by numerous longitudinal valleys with a general east-west orientation. Although Mont Blanc is the highest of their peaks (4807 meters above sea-level), other mountains, such as the Matterhorn (4478 m) or the Drei Zinnen, the Three Pinnacles (2998 m), are more famous...

In context, then, *Wonders of Nature* states that the Alps, at an altitude of some 4,800 meters, have existed for at least one million years. Clearly, the *God’s Word* book’s author is a bald-faced liar.

Wonders of Nature later describes the formation of the Himalayas (p. 102). Once again it is evident how dishonest the author of the *God’s Word* book was in removing this bit of context:

Prodigious forces are required to shape any landscape, and the mountains of Central Asia are no exception. Indeed, they provide a very interesting example of the processes at work in the building of a major landform. Some 200 million years ago, the southern edge of the Asian continent was situated approximately along the line of the present-day Himalayas, although with a far smaller elevation. After a period of about 100 million years, a new continent was ‘grafted’ onto this continental block in the form of drifts from the south that had become separated from the main Antarctic land mass. The drifting land plate that today forms the Indian subcontinent collided with the Asian land mass so that the rocks of the two continental plates buckled and thrust over one another in the zone of contact. (This incidentally accounts for the examples of petrified marine life found at altitudes of over 8000 meters.) The folding of the Himalayas was such a slow process that the rivers antedating the collision, which flowed into the ocean at the edge of what was then the Asian continent, were able to cut deeper and deeper into their valleys and thus survive the major upheavals taking place around them. Probably the best example is afforded by the valley of the Brahmaputra, north of the Himalayas.

The author of the *God’s Word* book concluded in paragraph 31:

Since the mountains and sea basins rise and fall, it is apparent that at one time the mountains were not as high as they are now and the great sea basins were not as deep.

Given the above information, it is apparent that the author deliberately misrepresented a source reference and the facts to make this conclusion. He wanted the time scale to be about 4,400 years, but it is actually hundreds of millions. He wanted his readers to think that pre-Flood mountains were so much lower than today’s mountains that the Flood could cover them with the amount of water that exists in today’s oceans. He wanted readers to believe that all the high mountain ranges of today, the Himalayas,

²⁸⁷ https://en.wikipedia.org/wiki/Seafloor_spreading

Andes, Alps, Rockies, etc., rose to their present heights in well under 4,400 years. This author is intellectually and scholastically dishonest.

The author goes on to write things that are so stupidly wrong that they would be amusing were they not part of a book believed by millions of people to be a product of “divine direction”:

32 What happened to the floodwaters after the Flood? They must have drained into the sea basins. How? Scientists believe that the continents rest on huge plates. Movement of these plates can cause changes in the level of the earth’s surface. In some places today, there are great underwater abysses more than six miles [more than 10 km] deep at the plate boundaries.¹⁶ It is quite likely that—perhaps triggered by the Flood itself—the plates moved, the sea bottom sank, and the great trenches opened, allowing the water to drain off the land.

The author has no idea of how fast tectonic plates move, or the scale of the “great trenches”. He is really referring to trenches at the subduction zones that exist where one tectonic plate dives under another.²⁸⁸ As the subducting plate slowly dives under the upper plate, it drags the seafloor along with it, creating a long, narrow trench. These trenches are at most a few tens of kilometers wide, so on the scale of an ocean basin they have a small volume, something like the groove left by dragging a knife point across the skin of an apple. Therefore the volume of water in these trenches is only a tiny fraction of the ocean’s volume—nowhere near enough to account for the required volume of Noah’s Flood.

In the next few paragraphs the *God’s Word* book engages in dog-ate-my-homework rationalization.

Traces of the Flood?

33 If we grant that a great flood could have happened, why have scientists found no trace of it?

They haven’t found traces of it precisely because *it did not happen*. Note that the writer has in no sense shown that such a Flood *could* have occurred, much less that it *did* occur.

Perhaps they have, but they interpret the evidence some other way. For example, orthodox science teaches that the surface of the earth has been shaped in many places by powerful glaciers during a series of ice ages.

Such science is merely organizing many observations that are often so obvious that denying such science would be like denying that ocean waves create ripples in the sand at the seashore. Around the world are many regions that were once glaciated and contain all manner of remnants of the glaciers, such as U-shaped valleys, leftover piles of sediment dumped by the glacier as it melted (moraines), long, sinuous ridges of sand and gravel dumped by under-glacier meltwater streams (eskers), etc. Such features are found all over New England and in today’s Alps. In the Alps one can see what landforms are left by glaciers that have receded long distances within living memory. One can see what landforms are uncovered by the retreat of Greenland’s glaciers. When one finds such features in the Antarctic, it is obvious that now ice-free land was once covered by glaciers. So when scientists observe exactly the same features in places like Canada, Europe and parts of Asia, it’s a no-brainer to figure out that those are once-glaciated regions.

But apparent evidence of glacial activity can sometimes be the result of water action.

Back to “science makes mistakes, so all science is invalid.” Yes, that’s a good argument, alright.

Very likely, then, some of the evidence for the Flood is being misread as evidence of an ice age.

This is pure speculation masquerading as real argument. Sometimes evidence is misinterpreted, to be sure. But that general fact has nothing to do with any specific situation. Furthermore, the Writing

²⁸⁸ <https://en.wikipedia.org/wiki/Subduction>

Department largely abandoned “flood geology” along with denial of the ice ages around 1980, so why this author invokes some of the abandoned claims is unclear. Perhaps he realizes that that’s all he’s got.

34 Similar mistakes have been made. Concerning the time when scientists were developing their theory of ice ages, we read: “They were finding ice ages at every stage of the geologic history, in keeping with the philosophy of uniformity. Careful reexamination of the evidence in recent years, however, has rejected many of these ice ages; formations once identified as glacial moraines have been reinterpreted as beds laid down by mudflows, submarine landslides and turbidity currents: avalanches of turbid water that carry silt, sand and gravel out over the deep-ocean floor.”¹⁸

Here we see classic Watch Tower rationalization again. Mistakes were made by 19th century scientists when trying to figure out the details of the Ice Age, so this means that the modern science of many ‘ice ages’ within the 2.6-million-year period called The Ice Age must also be wrong in many details. But again the author offers no specifics, and his rationalization is valueless.

Here are some facts: during the 1950s and 1960s geologists were finding that there were many ice ages during the earth’s history,²⁸⁹ some lasting more than a hundred million years. It is easy to find much information online about these.²⁹⁰ The last general ice age began about 35-25 million years ago; the most intense part of it about 2.6 million years ago. The evidence is good that the Antarctic began freezing up about 35-25 million years ago, so that provides the definition for the latest overall cold period. Conditions gradually became colder, so that by about 2.6 million years ago relatively short term ice age cycles began. The period of cyclical glaciation is called the Pleistocene Ice Age,²⁹¹ the Last Glacial Period or colloquially just The Ice Age, and coincides with the Pleistocene geological Period. These cycles were driven by regular changes in the earth’s orbit (Milankovitch cycles²⁹²), which created conditions in the northern hemisphere where summers became enough cooler than normal that accumulations of snow remained on the ground through to the next winter. These would gradually pile up into glaciers, which when they got big enough covered much of Canada, Northern Europe, and large parts of Siberia. The orbital variations recurred about every 100,000 years. Each cycle can be called an ‘ice age’, with the understanding that it was just a period that changed from cool to warm and back again, with glacial conditions in much of the north during the coldest portions of the cycle.

The latest ‘ice age’ began about 115,000 years ago and reached a maximum of ice cover about 27,000-22,000 years ago. It became gradually warmer, by fits and starts, through about 8,000 years ago.²⁹³ Sea level fluctuated drastically during these cycles, being as much as 10 meters higher than today in the warmest interglacial periods, and 130 meters lower during the glacial maxima when so much water was tied up in the glaciers. After the last glacial maximum, sea level began to rise, in earnest about 14,000 years ago, and settling to about today’s level about 8,000 years ago.²⁹⁴ Ice cores from Greenland and Antarctica have provided records of these cycles, going back more than 120,000 years in Greenland and 700,000 years in Antarctica.²⁹⁵ The fact that massive glaciers have existed in these regions for so long is another proof against Noah’s Flood: such a flood would have floated away and broken up earlier glaciers, forcing today’s continental glaciers to form in just a few hundred years after the Flood. No way, no how.

²⁸⁹ John Imbrie and Katherine Palmer Imbrie, *Ice Ages: Solving the Mystery*.

²⁹⁰ https://en.wikipedia.org/wiki/Ice_age

²⁹¹ https://en.wikipedia.org/wiki/Quaternary_glaciation

²⁹² https://en.wikipedia.org/wiki/Milankovitch_cycles

²⁹³ https://en.wikipedia.org/wiki/Last_Glacial_Period

²⁹⁴ https://en.wikipedia.org/wiki/Sea_level_rise

²⁹⁵ https://en.wikipedia.org/wiki/Ice_core

In the waning period of the recent ice age, a sudden cooling occurred, followed by a sudden warming. This period is dubbed the Younger Dryas, and lasted from 12,800 to 11,500 years ago.²⁹⁶ Various hypotheses have been advanced for its cause, but no definitive evidence has been found. Hints in the geology of North America and its environs have been found, such as fuzzy evidence for a comet strike in Canada or Greenland, and evidence that an especially bad flood occurred at the southern edge of the Canadian ice sheet that dumped massive amounts of meltwater into the North Atlantic, disrupting the huge current that brings heat from the tropics to the North Atlantic and knocking the climate back into ice age conditions. At the end of this waning period, climate settled down to approximately today's conditions.

The end of the last ice age has presented geologists with a number of mysteries, concerning both physical events that occurred or possibly occurred, and the spread of humans into various parts of the world, especially the Americas. What event or events occurred that resulted in the extinction of the so-called ice age megafauna such as mammoths, mastodons, giant ground sloths, saber-toothed cats, horses, camels, giant beavers, dire wolves, etc.? When did humans first enter the Americas, and how? A recent news report indicates that humans were in North America 5,000 years earlier than has been long held.²⁹⁷ What happened to the Clovis people, early Paleo-Indians who apparently had spread over much of what is now the United States after their stone tools first appeared in deposits about 13,500 years old, but who suddenly disappeared from the fossil record about the time the Younger Dryas cold spike happened.²⁹⁸ The Clovis people hunted mammoths and other big game, so did they cause or contribute to the extinction of the megafauna?

By about 14,000 years ago the climate was warming fairly rapidly, although not smoothly. As the ice sheets melted they formed vast lakes at their southern edges, which apparently broke through their temporary dams from time to time and dumped huge amounts of meltwater into the oceans. A good example of this were the Missoula floods,²⁹⁹ where in a mountain region in Montana, Idaho and eastern Washington, glacial meltwater backed up behind an ice dam into a lake (called Lake Missoula) with a volume more than that of Great Lakes Erie and Ontario combined, and a depth of some 600 meters at the ice dam. Between about 15,000 and 12,000 years ago Lake Missoula broke through the ice dam between 40 and 100 times, and catastrophically flooded Eastern Washington and Oregon and the Columbia River Gorge. The rushing water deepened and widened the Columbia River Gorge, flooding Oregon's Willamette Valley from Portland south to Eugene more than 100 meters deep. The floods formed Washington's "channeled scablands"³⁰⁰ which are a region of channels literally ripped into the basalt bedrock by the rushing flood waters over an area of some 5,000 square kilometers. These floods were not unique. One or more similar floods carved the famous Palisades of the Hudson River that run through New York City. A large meltwater lake in central New York State broke its dam and catastrophically rushed through the valleys of the Mohawk and Hudson Rivers. Similar floods occurred at the southern edge of the continental glacier in the central United States, dumping huge amounts of water into the Mississippi Valley.

With all that in mind, note that the *God's Word* author quoted from a 1960 issue of *Scientific American*. In 1960 the modern views on the ice ages were rapidly developing, but far from complete. The rest of the 1960s saw many more discoveries and analyses that resulted in a much better picture of the history of ice ages than existed in 1960. See the above-referenced book *Ice Ages: Solving the*

²⁹⁶ https://en.wikipedia.org/wiki/Younger_Dryas

²⁹⁷ <https://www.iflscience.com/editors-blog/official-first-americans-werent-clovis-people-after-all/>

²⁹⁸ https://en.wikipedia.org/wiki/Clovis_culture

²⁹⁹ https://en.wikipedia.org/wiki/Missoula_Floods

³⁰⁰ https://en.wikipedia.org/wiki/Channeled_Scablands

Mystery for details of this development. Interestingly, the SA author seems to have accepted that there was a “Noah’s Flood” of sorts, and attributed stories of it to the displacement of ancient people as sea level rose up through the end of the most recent Ice Age.

At any rate, the *God’s Word* author’s quotation of the *Scientific American* article provides not a shred of evidence for Noah’s Flood or against the modern view of the ice ages, and is of no import.

Much of the above information was well known to scientists by the time the *God’s Word* book was published in 1989. Yet the author wrote this nonsense:

35 Another evidence for the Flood appears to exist in the fossil record. At one time, according to this record, great saber-toothed tigers stalked their prey in Europe, horses larger than any now living roamed North America, and mammoths foraged in Siberia. Then, all around the world, species of mammals became extinct. At the same time, there was a sudden change of climate. Tens of thousands of mammoths were killed and quick-frozen in Siberia. Alfred Wallace, the well-known contemporary of Charles Darwin, considered that such a widespread destruction must have been caused by some exceptional worldwide event.¹⁹ Many have argued that this event was the Flood.

The author has compressed the events of several tens of thousands of years into just one year—the year of Noah’s Flood. Yet he provides no justification for this whatsoever. Attempts at justification were given in earlier Watch Tower literature, following the ideas of various crackpot creationists and “flood geologists” like George McCready Price and Henry Morris³⁰¹ (see page 16 for more information) but as I’ve said, the Watch Tower Society largely abandoned these ideas around 1980. Apparently the *God’s Word* author missed the boat.

The author gives no time frame for when the ‘saber-toothed tigers’ and mammoths roamed the world. His use of the phrase “at one time” strongly suggests the short period between the creation of land animals beginning 13,000 years ago and the year of the Flood, 2370 BCE (obviously using Watch Tower chronological claims). But these creatures have existed for millions of years. The author correctly states that many types of animals became extinct, but fails to note the time frame found by paleontologists: an extended time of extinction between about 14,000 and 4,000 years ago. He compresses these thousands of years into an unspecified but very short period of “sudden change of climate” where tens of thousands of mammoths were killed and quick-frozen in Siberia (all of this is nonsense). He is so ignorant of real science that he compresses all of these things, and a lot more, into the one “exceptional worldwide event” that was Noah’s Flood.

The author repeats the old Watch Tower chestnut of “quick-frozen mammoths in the Arctic”, but this is a myth invented by various cranks and armchair geologists since the late 1800s and adopted by young-earth creationists such as Price and Morris. Frozen mammoth carcasses and other animals have certainly been found, but none were “quick-frozen”. Rather, their surroundings show normal freezing in Arctic temperatures. Today’s young-earth creationists admit that their old ‘quick-frozen mammoths’ notion is wrong.³⁰²

³⁰¹ Many authors down through the years, who would be considered cranks by modern scientists, borrowed from each other and produced a body of pseudoscientific literature from which Watch Tower authors freely borrowed. For example, the June 8, 1975 *Awake!* article “A Worldwide Flood—What Does It Mean to You?” quoted the crackpot Reginald Daly: << *Earth’s Most Challenging Mysteries* observes: “There is one significant fact that is always connected with every dinosaur fossil and every mammoth fossil, and that is that every fossil is almost invariably dug out of water-laid sedimentary rock. Every fossil is either dug out of shale, which is just floodwater mud hardened into rock, or out of floodwater sand hardened into sandstone, or frozen into permafrost.” [p. 39] >>

³⁰² <https://answersingenesis.org/extinct-animals/ice-age/were-siberian-mammoths-quick-frozen/>

There is absolutely no evidence for the Society's claim that "tens of thousands of mammoths were killed" simultaneously and then "quick-frozen in Siberia". Once again this is mostly due to the horrible misinterpretations of armchair geologists like Henry Howorth³⁰³ and a few other crackpots like Immanuel Velikovsky.³⁰⁴ A number of large mammals have been found that, upon careful analysis, proved to have died of quite natural causes and were gradually frozen, and which partially decomposed before they froze. For example, on page 114 the *God's Word* book shows the classic Berezovka frozen mammoth from Siberia, and comments that it was "quick-frozen" (see below for more). However, a look at the reports from the Russian scientists who took two years to recover the carcass shows that the carcass was badly decomposed deep inside. The outer portions were frozen and preserved well enough that sled dogs ate some of the meat, but the men who dug it out realized that the flesh was already in bad shape when it was frozen and would not eat it because it was saturated with the odor of decay. One of the more enlightening aspects of their report concerned the unbearable stench from the carcass, which even permeated the frozen ground around it, proving that the carcass decomposed during the freezing process. This was by no means an instantaneous event.

Perhaps the best disproof of the notion of "huge numbers of quick-frozen animals" is the 1979 discovery of a partial frozen bison carcass in Alaska. This was dubbed "Blue Babe" because of the blue mineral crystals that had accumulated on the hide during the more than 30,000 years it remained in the Alaskan permafrost.³⁰⁵ It turned out that the bison, *Bison priscus*, a form now extinct, had been killed and partly eaten by American lions. That lions had done the deed was found from a piece of molar that had broken off and become lodged in the frozen flesh of the forequarters. The lions ate most of the body, leaving the skin and much of the forequarters. The head was virtually intact. The carcass contained many pupae of the flies that infest dead animals. There is no way such a thing could have happened during the cataclysmic events of a Flood such as the Watch Tower writer envisions.

One of the more recent crackpot articles on "quick-frozen mammoths" appeared in a 1960 *Saturday Evening Post* article.³⁰⁶ Watch Tower writers seem to have taken its nutty ideas and run with them for the next 30 years, although they had been using a form of them at least as far back as 1927. The author, one Ivan T. Sanderson, seems to have borrowed and exaggerated the ideas of the infamous Immanuel Velikovsky, who science writer Martin Gardner described as "the very model of a crank".³⁰⁷ Sanderson was a paranormalist and cryptozoologist (he coined the term in the 1940s) who specialized in writing about weird phenomena.³⁰⁸ His ideas on "quick-frozen mammoths" and such were so out of touch with reality that he was unable to get them published in reputable scientific journals.³⁰⁹

Paragraph 35, which we are here considering, is on page 114 of the *God's Word* book. As I mentioned above, on that page also appears a picture of the reconstructed remains of the Berezovka mammoth (see page 23 of this paper), a frozen specimen found in 1899 in Siberia and whose remains are on display in the Zoological Museum in St. Petersburg, Russia. The Russian government sent an expedition to recover the remains in 1901, and the final report appeared in the *Smithsonian Institution Annual Report for 1903*. The Society has been using the idea of "frozen mammoths" to argue in favor of the Flood since at least 1927 (*Creation*, 1927, pp. 43-45), and a depiction of the Berezovka

³⁰³ https://en.wikipedia.org/wiki/Henry_Hoyle_Howorth

³⁰⁴ https://en.wikipedia.org/wiki/Immanuel_Velikovsky

³⁰⁵ <https://www.uaf.edu/museum/press/spotlight/blue-babe/>

³⁰⁶ "Riddle of the Frozen Giants", *The Saturday Evening Post*, Ivan T. Sanderson, January 16, 1960.

³⁰⁷ Martin Gardner, *Science: Good, Bad and Bogus*, p. xiv.

³⁰⁸ https://en.wikipedia.org/wiki/Ivan_T._Sanderson

³⁰⁹ For a more detailed look at, and debunking of Sanderson's ideas, see <https://critiquesonthewatchtower.org/old-articles/2006/02/part-2-polar-regions.html>

mammoth from the *Smithsonian Report* was used in Watch Tower publications at least as early as 1967 (*Did Man Get Here by Evolution or by Creation?* p. 106).

Tellingly, the 1927 *Creation* book quoted (pp. 43-45) the crackpot Isaac Newton Vail, originator of the whacky “annular theory” of the Flood (1874), about the discovery of the Berezovka mammoth. Vail wrote a Letter to the Editor of *Scientific American* (the reference is undated) where he touted his “annular theory” as explaining how the Berezovka mammoth was buried and quickly froze. As usual, the Watch Tower author, J. F. Rutherford, was too ignorant of science to understand how truly bizarre Vail’s ideas were.

Rutherford was so abysmally ignorant of science that he lumped all “mammoth animals”, from dinosaurs to woolly mammoths, into one big category (*Creation* pp. 42-43). He wrote:

At one time there were upon the earth great numbers of mammoth animals, some of them measuring eighty feet in length. Proof of this is now found in skeletons digged from great depths in the earth. Great numbers of these mammoths roamed the earth. Some have been found frozen in the ice and snow, while skeletons of others have been digged from the beds of earth and stone in the tropical regions.

Immediately after this nonsense, Rutherford quoted the material from Vail described above.

Later Watch Tower writers were equally ignorant. The 1943 book “*The Truth Shall Make You Free*” repeated much of the earlier nonsense about “the earth’s creation and the Flood” in chapter 4. So did the article “The Flood of Noah’s Day” in the June 22, 1949 *Awake!*, which repeated Vail’s “annular theory” and said (p. 7):

The huge mammoths and mastodons were frozen alive before they could flee, and when recently dug out of the Canadian and Siberian iceboxes their flesh, skin and hair were as well preserved as if they had been kept in a modern deep-freeze refrigerator. These are cold facts that cannot be disputed; facts that prove the Bible record is true.

For an in-depth but dated analysis of the question of the Flood, see my 1991 essay “The Flood”³¹⁰. For many details about the Berezovka mammoth see “The Polar Regions”³¹¹.

As for Alfred Wallace, later in life he became a spiritualist and seems to have accepted a sort of “theistic evolution” view of creationism.³¹² His views on these things were rejected by reputable geologists. Also note that, as is so common in Watch Tower literature, the author gives no source reference for his quote of Alfred Wallace.

In view of the above information, it is evident that the evidence for Noah’s Flood given so far by the *God’s Word* book is nonexistent, outdated, a misrepresentation of reality, and really, no evidence at all.

The *God’s Word* author next quotes from a “Letters to the Readers” section of a reputable archaeology magazine. The letter was written in 1977 by David Noel Freedman,³¹³ a recognized biblical scholar. As a letter to readers, it was **not** an “editorial in the magazine”, so we have yet another instance where a Watch Tower writer is dishonestly attributing more authority to his source than is warranted. Freedman’s letter mainly addressed recent attempts to find Noah’s Ark on Mt. Ararat, but touched on other subjects. Of course, said Ark has not been found.

³¹⁰ <https://critiquesonthewatchtower.org/old-articles/2006/02/part-1-general-description-of-flood.html>

³¹¹ <https://critiquesonthewatchtower.org/old-articles/2006/02/part-2-polar-regions.html>

³¹² https://www.conservapedia.com/Alfred_Russel_Wallace

³¹³ https://en.wikipedia.org/wiki/David_Noel_Freedman

Paragraph 36 in *God's Word* is supposed to support the theme “traces of the flood”, but is much more of a “throw it against a wall and see what sticks” kind of support. Note the ellipses in the quote: they hide information that tends to throw cold water on the author’s attempt at support:

36 An editorial in the magazine *Biblical Archaeologist* observed: “It is important to remember that the story of a great flood is one of the most widespread traditions in human culture ... Nevertheless behind the oldest traditions found in Near Eastern sources, there may well be an actual flood of gigantic proportions dating from one of the pluvial periods ... many thousands of years ago.”²⁰

The entire quote is:

While on the subject of the flood, in another article Professor Tikva Frymer-Kensky of Wayne State University calls attention to unusual parallels between the biblical account and the Akkadian version, which otherwise differs in important respects. It is important to remember that the story of a great flood is one of the most widespread traditions in human culture, and the question of possible or probable relations, literary and cultural among them, has concerned scholars for generations. A major issue is whether the stories have spread from a common source, being modified and adapted to local circumstances in the process, or whether they arose spontaneously in different parts of the world as a result of historical experience of major cataclysms. It may well be that the truth lies somewhere between the extremes, and the surviving stories are an amalgam of the interaction of multiple influences. Nevertheless behind the oldest traditions found in Near Eastern sources, there may well be an actual flood of gigantic proportions dating from one of the pluvial periods (corresponding to the great glacial advances) many thousands of years ago. This is not quite the same thing as finding a piece of Noah’s ark, but in the long run it may be more significant for biblical and humanistic studies.

By his use of ellipses the author hid from his readers Freedman’s important point that the Flood story in the Bible is but one of many such ancient Mesopotamian flood stories, and that scholars are actively trying to sort them out. He also hid the important information that Freedman’s use of “pluvial periods” referred to “the great glacial advances” of thousands of years ago. Freedman was partly wrong; the term ‘pluvial period’ was used in geology before modern views sorted out many issues, mostly in the 1960s. “Pluvial period” now refers to *any* relatively wet period, not just to wet periods within the ice age cycles. Contrary to Freedman’s understanding, these wet periods sometimes occurred during the warm interglacial periods, not just during glacial advances.

The latest relatively wet period occurred within the past 115,000 years, where ice built up by fits and starts in the northern hemisphere. By the glacial maximum about 27,000-20,000 years ago many large lakes had formed in the Great Basin of the American southwest. The largest was Lake Bonneville, which covered as much as 83,000 square kilometers, was some 300 meters deep where Utah’s Salt Lake City is today, and had a volume about equal to Lake Michigan.³¹⁴ Its shorelines, up to 300 meters above the present level of Great Salt Lake, can be seen today etched in the mountains around the great basin that contains Salt Lake City. Many other shorelines can also be seen, showing that the lake level remained constant for long periods of time at various levels. Great Salt Lake is tiny remnant of it. It seems to have existed off and on for at least 800,000 years, filling and drying with each ice age cycle. With each drying cycle it deposited evaporites like salts, leaving a valley filled with hundreds of meters of salt deposits. Today’s Bonneville Salt Flats are a small part of these deposits, which are so flat that the Bonneville Speedway is the site of land speed records.³¹⁵

Interestingly, about 14,500 years ago. Lake Bonneville reached a high enough level to break through its northern border in a catastrophic flood that ripped through Red Rock Pass in Idaho and flowed out through the Snake and Columbia Rivers. This happened during the period when the 40+ Missoula

³¹⁴ https://en.wikipedia.org/wiki/Lake_Bonneville https://en.wikipedia.org/wiki/Bonneville_flood

³¹⁵ https://en.wikipedia.org/wiki/Bonneville_Salt_Flats

floods were occurring. In the Snake River valley these floods deposited huge gravel bars whose bedding planes indicated that the floods swept upstream. The Bonneville flood deposited its own huge gravel bars on top of these, with downstream-pointing bedding planes. Later on more of the Missoula floods deposited further upstream-pointing gravel bars. These events, occurring over some 3,000 years, are irrefutable disproofs of Noah's Flood.

Lake Bonneville is just the largest of dozens of 'pluvial lakes' that existed in the Great Basin and surrounding areas during the Pleistocene Ice Age. The Mojave Desert in California is the bottom of one such lake. The infamous Area 51 of the American military, also called Groom Lake,³¹⁶ is another such lake bottom. An airplane flight between San Francisco and Denver traverses this region, and reveals dozens of such dried lakes.

Obviously, the existence of dozens of dry lakes, with many layers of evaporites having been laid down over hundreds of thousands of years, is proof that there was not just a single event some 4,400 years ago that produced them. Thus, the 'pluvial periods' referenced by the *God's Word* author have nothing to do with Noah's Flood.

At any rate, it has long been known that Mesopotamia has had many major floods down through the ages. The region of the Tigris and Euphrates rivers has had plenty of floods, and the humans who have inhabited it for tens of thousands of years have experienced them. But all of them have turned out to have been local floods.³¹⁷ Bad floods would be remembered in campfire stories, and it's entirely possible that several of these became merged into one story by 5,000 years ago, when the earliest Sumerian Flood stories were written down. And of course, being a really cool campfire story means that visitors would have picked it up and made it one of their own stories, and likely spread it around the world.

River floods are not the only possibilities. In recent times it has become evident to geologists that during the ice age maxima the Red Sea was a dry valley with the merged Tigris/Euphrates river running through it, since sea level was up to 130 meters lower than today. This would have been a desirable and fertile place for people to live around 10,000 years ago. It might have contributed to the legends that resulted in the stories of Adam and Eve. When sea level rise ended 8,000 years ago, the flooding would surely have been remembered and mythologized. There is also the controversial Black Sea flood of about 7,500 years ago. The idea is that the Black Sea was isolated from the Mediterranean for quite some time by the present-day Bosphorus Strait being closed off, and the Black Sea was then a freshwater lake about 150 meters below today's level. At the end of the ice age, as sea level rose, the Bosphorus was breached and the Black Sea filled with seawater, displacing all inhabitants around its shores. These people spread far and wide, taking their flooding story with them. This idea is strongly defended and disputed by many people. Another possibility is that, as sea level rose relatively rapidly until 8,000 years ago and displaced many people living on the coasts, they developed legends and myths about this flooding. Many such stories might have gradually merged and produced the Sumerian flood stories, which later influenced flood stories around the world as the most engaging campfire stories diffused into other cultures.

³¹⁶ https://en.wikipedia.org/wiki/Area_51

³¹⁷ British archaeologist Leonard Woolley excavated the Sumerian city of Ur in the 1920s and found thick sedimentary deposits from a flood, concluding that he must have found traces of Noah's Flood. Later work showed that, while extensive, the flooding was of limited geographical extent. https://en.wikipedia.org/wiki/Leonard_Woolley

Given the way people travel and socialize, it would be unsurprising if a number of ancient flood stories gradually merged into one, as Noel Freedman said above,³¹⁸ which became more or less standardized, and in the usual way that particularly entertaining stories evolve, propagated all over the world, perhaps supplementing or replacing existing stories.

Next, the *God's Word* author tries to make a joke with 'pluvial periods':

The pluvial periods were times when the surface of the earth was much wetter than now. Freshwater lakes around the world were much larger. It is theorized that the wetness was caused by heavy rains associated with the end of the ice ages. But some have suggested that on one occasion the extreme wetness of the earth's surface was a result of the Flood.

The joke falls flat on any audience with real knowledge of the ice ages, as the above information shows, because the author obviously has no clue what a 'pluvial period' is. As indicated above, pluvial lakes were numerous and existed during the entire period of The Ice Age.³¹⁹ Nor were these pluvial periods caused by "heavy rains associated with the end of the ice ages." Rather, they were the result of the same climate conditions that caused the glaciations themselves, which caused cooler temperatures, decreased evaporation and increased rainfall in some non-glaciated regions. No uniquely catastrophic event produced these long term climate changes.

The author's gross incompetence allowed him to state that "some have suggested that on one occasion the extreme wetness of the earth's surface was a result of the Flood." This completely misses the points described above. It again demonstrates an extreme ignorance of the concept of *time* by saying that "*on one occasion* the extreme wetness ... was a result of the Flood". It also shows his proclivity for trying to make scientists look like fools, but his ridiculously stupid attempt at facetious humor merely shows how ignorant he is. This failed attempt at humor is quite revealing about the mentality of those who write for the Watch Tower Society. It proves that they know absolutely nothing about geology or the physical evidence behind the science of geology. Such ignorant men have no business writing books critical of science.

Mankind Did Not Forget

37 Geology professor John McCampbell once wrote: "The essential differences between Biblical catastrophism [the Flood] and evolutionary uniformitarianism are not over the factual data of geology but over the interpretations of those data. The interpretation preferred will depend largely upon the background and presuppositions of the individual student."²¹

This quote is taken from *The Genesis Flood*, a book by the arch young-earth creationists Henry Morris and John Whitcomb and published originally in 1961. Whatever McCampbell's presuppositions, his statement here is just plain wrong, in light of developments in geology since 1961. Also remember that, by 1989 when the *God's Word* book was written, the Society had abandoned many of its older ideas about ice ages and the Flood, and had published a number of scathing denunciations of the young-earth creationists—the very ones whose works the book is referring to here! So the author is not only wrong about geology, but is inconsistent with Watch Tower teaching in prior publications!

38 That the Flood did happen is seen in the fact that mankind never forgot it. All around the world, in locations as far apart as Alaska and the South Sea Islands, there are ancient stories about it. Native, pre-Columbian civilizations of America, as well as Aborigines of Australia, all have stories about the Flood. While some of the accounts differ in detail, the basic fact that the earth was flooded and only a few humans were saved in a man-made vessel comes through in nearly all versions.

³¹⁸ <https://www.jstor.org/journal/biblarch>

³¹⁹ https://en.wikipedia.org/wiki/Pluvial_lake

This argument about the widespread idea of an ancient Flood is the strongest that the Society has. But it is far from conclusive, and it certainly doesn't prove the author's case. At most it proves that flood stories migrated from culture to culture a long time ago.

As mentioned above, the two best documented ancient cultures—the Egyptians and the Chinese—have records going back continuously more than 5,000 years. Yet these records show nothing of a Flood during their history. This completely contradicts the Watch Tower chronology that places the Flood in 2370 BCE, about 4,400 years ago.

The only explanation for such a widespread acceptance is that the Flood was a historical event.

Wrong. There are a number of explanations. One is that the ancient legend of a Flood that came from the Sumerians, or whoever had the bad luck of getting whacked by a Mesopotamian flood of some 5,000 years ago, was a really cool legend that automatically was told and retold and passed from culture to culture. All it shows is the efficiency with which ancient legends, if “cool” enough, could be spread.

39 Thus, in essential features the Bible is in harmony with modern science.

Only by making rather large concessions that work against Biblical literalism, and if one is willing to ignore details in favor of vague, fuzzy notions. In detail the Genesis account is contradicted by extremely solid science. The only way to salvage Genesis is by interpreting its statements as allegory, just as literalists were forced to do with statements about the motion of the sun.

Where there is a conflict between the two, the scientists' evidence is questionable.

This statement is far more a reflection of the writer's state of mind than an objective assessment of the evidence. In almost all cases of conflict, a careful consideration of *all* of the evidence shows that the most questionable area is the interpretation of Biblical literalists.

Where they agree, the Bible is often so accurate that we have to believe it got its information from a superhuman intelligence.

“We have to believe”. That is a clear statement of the author's state of mind and an honest admission of the emotional nature of biblical literalism.

Indeed, the Bible's agreement with proved science provides further evidence that it is God's word, not man's.

We note that “proved science” is just a euphemism for “whatever the Watch Tower Society agrees with”, and therefore that the entire statement amounts to a completely circular argument: “the Bible's agreement with us proves that it is God's word”. This is far more a reflection of the Watch Tower belief that its leaders speak for God than anything else. It is completely meaningless.

Far more could be written that shows that the *God's Word* book is a study in self-serving, dishonest rationalization. It is a thoroughly inaccurate book, of which honest Watch Tower representatives should be ashamed.

Book *Is There a Creator Who Cares About You?* 1998

The *Creator* book was the Watch Tower Society's last book-length treatment of evolution/creation. While in some respects it is better than the earlier books discussed above, it suffers from many scholastic defects common in Watch Tower literature: bad arguments, incomplete or no source references, no bibliography. The book does not replace previous ones of its genre, but is supplementary to them.

The book tends to follow the arguments given in the 1990s by so-called Intelligent Design proponents such as Dean Kenyon, Michael Behe, Michael Denton and Phillip Johnson. Since 1998, critics have pointed out that the goal of such ID proponents, following their parent organization The Discovery Institute, is to replace modern science with a sectarian version of science taught by many Fundamentalists in "Christendom".³²⁰ Post-2010 Watch Tower publications have largely stopped using them as references.

Chapter 6: "An Ancient Creation Record—Can You Trust It?"

Oddly enough the *Creator* book gives almost no arguments in support of the title theme of this chapter. The few it does give are poor at best.

"In the Beginning God Created" the Universe?

The book quotes Genesis 1:1 (p. 84) from the *New World Translation*: "In the beginning God created the heavens and the earth." Following many Christian traditions, it later states that this refers to the creation of the material universe and of everything in the "spirit heavens". But this is merely a traditional assumption, because Gen. 1:1 could just as well be translated "God created the sky and the land", referring purely to the earth. This makes perfect sense when one argues, as the Society does, that Genesis was written from the standpoint of someone on the surface of the earth. Without a great deal of supporting scholarly argument, this reference to a "material universe" is reading modern ideas into ancient texts and reading "spiritual" ideas into a statement that is obviously about the physical earth. Such a leap must be rigorously justified, but such scholarly argument appears nowhere in the *Creator* book, nor in Watch Tower literature as a whole. It is merely assumed.

Indeed, many have shown clearly that Genesis contains no hint of *creatio ex nihilo*—creation from nothing:³²¹

What the text of Genesis 1:2 informs us is that when God began to create, earth in some manner of speaking already existed as a desolate, formless, empty waste—*tohû wabohû* in Hebrew, literally "desolation and waste"—in the midst of a dark surging watery abyss (*tehôm*). This is the initial primordial state of creation that the creator deity inherits so to speak, and it is a prominent cultural feature in other ancient Near Eastern creation myths, from Egypt to Mesopotamia... In general terms, then, the authors and cultures of these ancient Near Eastern creation myths, Genesis 1:1-2:3 included, did not conceive of creation as an act of creating matter, but an act of creating order, form, purpose, a habitable land with tamed and separated waters out of an initial primeval state of surging untamed waters, darkness, and a yet to be named and formed life-supporting earth.

The Hebrew readers of Genesis had no idea that anything besides the great heavenly deep of the 'waters above the expanse' existed above the visible face of the sky (Gen. 1:7). To them, the "heavens"

³²⁰ See the "Wedge Document" from the Discovery Institute: <http://www.antievolution.org/features/wedge.pdf>
Also https://en.wikipedia.org/wiki/Discovery_Institute

³²¹ <http://contradictionsinthebible.com/genesis-1-not-a-creatio-ex-nihilo/>

were what one saw when looking up. Genesis is quite clear on this: God put the luminaries—sun, moon, stars—in, **not above**, the expanse of the sky, i.e., in the *raqia*³²² that is evident to anyone looking up at the blue, metal-shield-like expanse that extends horizon to horizon. Gen. 1:8 equates the “expanse” and “heaven”. So does Psalm 19:1 in a poetic manner: “The heavens are declaring the glory of God; And of the work of his hands the expanse is telling.” Contrary to Watch Tower tradition, there is no hint in the OT that the *raqia* refers to the atmosphere, to something extended in *three* dimensions; rather, the contexts of all of its uses in the OT clearly refer to a surface spread out in *two* dimensions, such as the sky.³²³ The rest of the Old Testament speaks of God dwelling in these heavens (1 Kings 8:43; cf. Isaiah 40:22). Claiming that the sky or heavens of Gen. 1:1 encompasses any more than that, such as the 3-dimensional atmosphere, is the fallacy of reading modern conceptions into ancient literature.

Similarly, the Hebrew word translated “earth” is *’erets*, which can mean earth (as opposed to heaven or sky), land, country, territory, ground, surface of the ground, people of all the globe.³²⁴ There is no good evidence that the OT writers knew of the full physical extent of our earth, or that it is a globe (see the section below on Isaiah 40:22 on page 294), or that there is a thing that we moderns call “space”, or that there is a thing we call the universe that consists of space and everything in it, such as our earth. The evidence in the OT itself shows this:³²⁵

The Israelite world view is the same as that generally held throughout the ancient Near East, according to which the earth is a disk resting in the ocean on foundations or pillars. This world view is expressed, e.g., in the verbs used to describe creation, *yasadh* and *raqa’*. The earth has four corners (*kanephoth ha’arets*, Isa. 11:12; Ezk. 7:2; Job 37:3; 38:13; ...), or an edge or hem (*kanaph*, Isa. 24:16), an end (*qatseh*, Dt. 28:49; Isa. 5:26; 42:10; ...) or ends (*qetsoth* ...), sides or remote parts ...

Isaiah Speaks About Matter and Energy?

Next, the *Creator* book spends time explaining Einstein’s equation $E=mc^2$, and how matter and energy are intimately related. The book states (p. 90) that the Bible “clearly shows the relationship between energy and matter”. This is another instance of reading modern concepts into an ancient text with no justification, in an attempt to make the Bible seem to say more than it actually does. The book then quotes Isaiah 40:26 in support:

‘... Who has created these things? ... Due to the abundance of dynamic energy, he also being vigorous in power, not one of them is missing.’ ... Yes, the Bible is saying that a source of tremendous dynamic energy—the Creator—caused the material universe to come into existence. This is completely in harmony with modern technology. For this reason alone, the Biblical record of creation merits our deep respect.

This argument can be shown to be wrong in at least two ways. The argument has appeared in Watch Tower literature several times.

First we note that the scriptural quotation is from the *New World Translation*. The key phrase here is “dynamic energy”. The book claims that this somehow has to do with the modern scientific concept of “energy”³²⁶. Does it?

³²² *Raqia* means “something spread out, beaten out thin like a metal shield, an extended surface”.—*Theological Dictionary of the Old Testament*, Vol. XIII, p. 646.

³²³ cf. Gen. 1:20: “let flying creatures fly over the earth **upon the face of the expanse** of the heavens.”—NWT

³²⁴ *Insight on the Scriptures*, Vol. 1, p. 667.

³²⁵ *TDOT*, Vol. I, *op. cit.*, pp. 395-396.

³²⁶ <https://en.wikipedia.org/wiki/Energy>

First consider the modern scientific concept. The footnoted Wikipedia article states:

In physics, energy is the quantitative property that must be transferred to an object in order to perform work on, or to heat, the object.

Energy comes in several forms: kinetic, thermal, potential, chemical, nuclear, elastic, radiant, etc. Did Old Testament writers know about any such things? Obviously not. Therefore they had no idea of the modern scientific concept of energy.

Let's go a few verses farther into Isaiah 40 and see what the Hebrew text actually means. In the *New World Translation*, verse 29 says of God, "He is giving to the tired one power; and to the one without dynamic energy he makes full might abound." Now, does that sound like God is giving "energy" in any modern scientific sense to the one who is tired and lacking power? Of course not. By the same token, Isaiah 40:26 is not saying anything about the relationship between matter and energy, because Hebrew readers of Isaiah knew nothing of the modern concept of energy.

This can be seen further by looking at the meaning of the Hebrew word 'ohnim that the *NWT* translates as "dynamic energy". A variety of Hebrew lexicons yield the following definitions: "great strength, might, power, manly vigor", and these quite properly describe God. A better translation of these verses might be this, from *Tanakh—The Holy Scriptures* by the Jewish Publication Society:

Because of His great might and vast power, not one fails to appear... He gives strength to the weary, fresh vigor to the spent.

Most Bible translations have something along this line. It seems clear that the author of the *Creator* book has relied on a non-standard translation, along with Watch Tower tradition, to make his point, which amounts to mere special pleading. The Society has used this false argument several times since 1986.³²⁷

Chapter 6 next briefly describes the creative days of Genesis 1 and claims that the order of creation in Genesis jibes with modern science (it does not; see page 145). The section is essentially a recapitulation of parts of Genesis 1 and 2 from the traditional Watch Tower viewpoint. The only evidence given in support of the chapter's thesis are a couple of references to highly controversial reports that may or may not have established that all humans today had a common ancestor, which even if true do not point to Adam and Eve as our first parents, but to Noah and his wife.

Mitochondrial Eve

The notions of a "Mitochondrial Eve" and of a "Y Chromosome Adam" received much media attention in the late 1980s and the 1990s.³²⁸ The *Creator* book commented about them (p. 98):

In recent years, scientists have researched human genes extensively. By comparing human genetic patterns around the earth, they found clear evidence that all humans have a common ancestor, a source of the DNA of all people who have ever lived, including each of us. In 1988, *Newsweek* magazine presented those findings in a report entitled "The Search for Adam and Eve." Those studies were based on a type of mitochondrial DNA, genetic material passed on only by the female. Reports in 1995 about research on male DNA point to the same conclusion—that "there was an ancestral 'Adam,' whose genetic material on the [Y] chromosome is common to every man now on earth," as *Time* magazine put it. Whether those findings are accurate in every detail or not, they illustrate that the history we find in Genesis is highly credible, being authored by One who was on the scene at the time.

³²⁷ *Awake!*, May 8, 1986, p. 17.

³²⁸ Easy introduction from the TV show PBS Eons: <https://www.youtube.com/watch?v=YNQPQkV3nhw>

This paragraph grossly misrepresents the intent of the *Newsweek* article's author³²⁹. Far from stating, or even implying, that all humans have a pair of recent common ancestors who lived at the same time and produced all of today's humans, he said:

She was not the only woman on earth ... She was simply the most fruitful, if that is measured by success in propagating a certain set of genes. Hers seem to be in all humans living today: 5 billion blood relatives. She was, by one rough estimate, your 10,000th-great-grandmother.

So this Mitochondrial Eve, according to the *Newsweek* article, was the ancient woman who, out of a **population** of ancient women, was the only one who happened to have her mitochondrial DNA survive until today. All other lines of MDNA descent died out. The *Creator* book's author deliberately misrepresented the *Newsweek* author's intent.

Compare this with David Splane's claims:

Splane 3:33: "... our researchers can examine the quote in context, to make sure that what we're seeing in print is really what the author of the quote had in mind."

Splane 4:02: "... when you examine the quote in context, you realize that that isn't what the author had in mind at all. We would never *deliberately* distort a quotation. We try very hard to use all of our quotations in context."

Note what the Wikipedia article³³⁰ about this has to say, and keep in mind that this was already known back in 1988:

In human genetics, the **Mitochondrial Eve** (also *mt-Eve*, *mt-MRCA*) is the matrilineal **most recent common ancestor** (MRCA) of all currently living humans, i.e., **the most recent woman from whom all living humans descend in an unbroken line purely through their mothers**, and through the mothers of those mothers, back until all lines converge on one woman. [bold added]

In terms of mitochondrial haplogroups, the mt-MRCA is situated at the divergence of macro-haplogroup L into L0 and L1–6. As of 2013, **estimates on the age of this split ranged at around 150,000 years ago**, consistent with a date later than the speciation of *Homo sapiens* but earlier than the recent Out-of-Africa dispersal.

So this Mitochondrial Eve had nothing to do with the supposed "mother of everyone living", the biblical Eve who would have been our **most ancient** common ancestor, but would have been our **most recent** common ancestor (MRCA). Furthermore, the *Creator* book's author should have claimed that this was, at the earliest, *Noah's wife*—not Eve.

The Mitochondrial Eve idea has generated much discussion and controversy, but the most recent consensus among scientists is that there was such a person who lived several hundred thousand years ago.³³¹ The same goes for the most recent Y chromosome ancestor of mankind.³³²

The *Creator* book's statements about Adam and the Y chromosome suffer from the same problem mentioned above: the most recent common ancestor of everyone living would not have been Adam, but Noah.

Furthermore, the Watch Tower Society dates Adam and Eve to about 6,000 years ago, and Noah to about 4,400 years ago, whereas the dates for Mitochondrial Eve and Y Chromosome Adam are several hundred thousand years ago. Of course, the Society's writer completely ignores all that—another instance of scholastic dishonesty.

³²⁹ <http://www.virginia.edu/woodson/courses/aas102%20%28spring%2001%29/articles/tierney.html>

³³⁰ https://en.wikipedia.org/wiki/Mitochondrial_Eve

³³¹ cf. <http://www.mhrc.net/mitochondrialEve.htm> https://isogg.org/wiki/Mitochondrial_Eve
<https://www.youtube.com/watch?v=zM1ZDQoX1RU>

³³² <https://www.youtube.com/watch?v=OPBVXbNJhQk>

It's astonishing that a writer who claims to know the Bible can manage to so badly bugger the difference between Adam and Eve, and Noah and his wife. And that such a writer, who claims to worship the God of Truth, can so shamelessly misrepresent the dates at which these ancestors were supposed to have lived—4,400 years ago rather than the several hundred thousand set forth in the science articles.

Order of Creation in Genesis Matches Modern Geology?

The *Creator* book follows the Society's pattern since the mid-1980s of failing to be specific about the length of the creative days. It says (p. 93):

The fact is, the Bible reveals that the creative "days," or ages, encompass thousands of years... the seventh "day" was a period spanning thousands of years, and we can logically conclude the same about the first six "days."

In most publications before the mid-1980s, the Society was dogmatic that the creative days were 7,000 years long,³³³ but in newer ones it has used the same sort of fuzzy language about periods "spanning thousands of years". It is apparent that science has shown solidly that life has been around for more than 3 billion years, so one might wonder why the Society remains so vague about this point. Likely it is to avoid alarming the older generation of Witnesses who continue to believe the old 7,000-year nonsense—another instance of dishonesty, this time by the Society's failing to be candid about its own teachings.

It should go without saying that stating that creative periods that lasted hundreds of millions of years were "thousands of years long" is like stating that the United States is thousands of inches across—technically true but completely misleading.

It is evident, upon questioning JWs under about 40 years of age about the length of the creative days, that almost none have heard of the 7,000-year day notion, and fully accept modern radiometric dating for the age of life—3.5+ billion years for microscopic life, half a billion for multicelled life, etc. The only exception is for the age of mankind, which is because the Society specifically claims that mankind is only some 6,000 years old.

In pages 93-101 the *Creator* book summarizes Genesis' description of God's activity during the first six creative days, as part of an attempt to argue that the order of creation specified in Genesis lines up with modern scientific notions and therefore must be a product of divinely given knowledge.

But here again we find gross scholastic dishonesty even in describing what the Bible says. Genesis does not explicitly include "the beginning" in the period of the creative days, but Exodus does:

For in six days Jehovah made the **heavens and the earth, the sea and everything that is in them**, and he proceeded to rest on the seventh day.—Exodus 20:11

In six days Jehovah made the **heavens and the earth** and on the seventh day he rested.—Exodus 31:17

Yet, following long-standing Watch Tower tradition, the book ignores these statements and pretends that Genesis 1:1 is not part of the period of creative days. But look at the passage again:

In the beginning God created the **heavens and the earth**.

Exodus clearly and explicitly includes the creation of the heavens and the earth in the six days during which God also made the sea and everything in it. Therefore, the Society's tradition that "the

³³³ The last explicit claim that the creative days were 7,000 years long appears to be in the January 1, 1987 *Watchtower*, p. 30

beginning” excludes the other creative activity of the six days is unscriptural and wrong. Claiming that the “heavens and the earth” of Genesis are somehow different from the “heavens and the earth” of Exodus, as some JW apologists have done, is pure special pleading.

In the final section of Chapter 6, titled “Can You Trust the Genesis Record?”, the book presents the argument that the order of creation given in Genesis closely matches the pattern given by modern science. It quotes “noted geologist Wallace Pratt” in support. Then it asks (p. 102), “Consider: How did Moses—thousands of years ago—get that order right if his source of information were not from the Creator and Designer himself?” Well of course, the book has provided no actual scientific references to support these claims. Some readers will note that these arguments are brief synopses of those given in much greater detail in the Society’s 1985 *Creation* book. It is easy to see why the writer does not prove his case, or give any actual evidence for it.

The question now arises: Does the order of creation given in Genesis really match the pattern given by modern science? And: is what “noted geologist Wallace Pratt” said correct?

The answer to both is No.

Below are summarized the order of origin of various features of the universe and the earth as given by modern science, and the Watch Tower Society’s version of the order of creation given in Genesis. The former is taken from a variety of scientific sources and is the commonly accepted narrative based on 200 years of fossil discoveries. The latter is taken from page 37 of the 1985 *Creation* book.

Science's order of origins

Big Bang 13.8 billion years ago forms the universe.

Universe cools enough for atoms to form. Light (photons) becomes able to penetrate the universe, forming what is today the cosmic microwave background radiation.

Milky Way Galaxy forms shortly after Big Bang.

Solar system including sun and planets forms about 4.6 billion years ago from clouds of gas and dust. State of earliest atmosphere, if any, unknown.

Mars-sized planet strikes earth a glancing blow, knocking off debris that condenses into the moon. Moon/earth system begins slowly transferring momentum from earth's rotation to moon's revolution about the earth; length of day begins increasing from 10 to 24 hours.

Volcanic outgassing forms early atmosphere and liquid water by about 4 billion years. Proto-continents begin to form.

Earliest life, archaea and bacteria, arises some time before 3.7 billion years. Stromatolites begin forming.

Oxygen producing cyanobacteria arise about 2.8 billion years ago; great oxidation event. Origin of photosynthesis.

Eukaryotes (cells with nuclei) arise around 1.6-2.1 billion years ago.

Origin of multicelled organisms between about 1 billion and 635 million years ago.

541-485 Ma (million years ago): Origin of life with hard parts—Cambrian 'explosion'.

485-445 Ma: First corals, bivalves, trilobites, jawless fish, etc.

445-419 Ma: First land plants, land-dwelling arthropods, jawed fish.

419-359 Ma: Seed-bearing plants, trees, insects, sharks, amphibians.

359-323 Ma: Large trees, land vertebrates.

323-299 Ma: Winged insects, reptiles.

299-252 Ma: Synapsids (mammal-like reptiles), cone-bearing trees, beetles, flies; great Permian-Triassic extinction kills off 95% of life.

252-201 Ma: Proto-dinosaurs, dinosaurs, pterosaurs, ichthyosaurs, crocodiles, mammals, modern corals and bony fish.

201-145 Ma: Many dinosaurs, lizards, birds.

145-66 Ma: Flowering plants proliferate; new insects, fish, dinosaurs, mosasaurs, modern sharks; primitive birds proliferate; monotremes, marsupials, mammals diversify; great Cretaceous-Paleogene extinction kills off dinosaurs and 70% of all life.

66 Ma to present: Mammals and birds greatly diversify; whales and bats begin to appear; man appears.

Watch Tower order of creation

A beginning at an unspecified time.

A primitive earth in darkness and enshrouded in heavy gases and water.

Light.

An expanse or atmosphere.

Large areas of dry land.

Land plants.

Sun, moon and stars discernible in the expanse, and seasons beginning.

Sea monsters and flying creatures.

Wild and tame beasts, mammals.

Man.

Clearly, the two origin narratives barely agree, other than that there was a beginning of some sort, then the stuff that everyone can see for themselves appeared, and man appeared last.

But is the order given in Genesis surprising? Not at all. It would not be logical to say that man came before all sea monsters, flying insects, wild animals, land, sea and the heavens, so he must have come later. Given that, it's logical that land animals and sea creatures came before man. Land animals eat plants, so plants must have come before those animals. Animals need light to see, so light must have come before them. Land plants live on dry land, so dry land must have come earlier. Flying creatures fly across the face of the expanse, so the expanse (sky) must have preceded them. And a beginning must have come before everything else.

“A beginning” is not unique to the Genesis story. The Hindu creation myth has Brahma creating universes from nothing in a never ending cycle. In the Egyptian creation myths, the God Atum created the earth out of primeval chaos. Various Chinese creation stories posit a beginning.

A crucial point that the Watch Tower narrative ignores, in both the *Creator* and *Creation* books, is that Genesis is quite clear that **all** flying creatures—insects, pterosaurs, birds, bats, flying fish—were created on the **fifth** creative day, **before any land creatures of any sort**. The same goes for **all** sea creatures. Note the account of creation on the fifth and sixth days:

Let the waters swarm forth a swarm of living souls and let flying creatures fly over the earth upon the face of the expanse of the heavens. And God proceeded to create the great sea monsters and **every living soul that moves about**, which the waters swarmed forth according to their kinds, and **every winged flying creature** according to its kind.—Gen. 1:20-21

Let the earth put forth living souls according to their kinds, domestic animal and moving animal and wild beast of the earth according to its kind. And it came to be so. And God proceeded to make the wild beast of the earth according to its kind and the domestic animal according to its kind and every moving animal of the ground according to its kind... And God proceeded to create the man in his image, in God's image he created him; male and female he created them.—Gen. 1:24-27

Similarly, Genesis has land plants appearing on the third creative day, with the implication that **all** kinds were created then, whereas the fossil record shows that fruit trees, grasses, and most of today's plants appeared long after the first appearance of many land animals, including mammals and birds:

Let the earth cause grass to shoot forth, vegetation bearing seed, fruit trees yielding fruit according to their kinds, the seed of which is in it, upon the earth. And it came to be so. And the earth began to put forth grass, vegetation bearing seed according to its kind and trees yielding fruit, the seed of which is in it according to its kind.—Gen. 1:11-12

So according to Genesis, whales—highly advanced mammals—appeared before dinosaurs. And hummingbirds appeared before toads. And fig trees appeared before fish. Is this really true?

Near the end of the chapter, the *Creator* book asks (p. 102):

Consider: How did Moses—thousands of years ago—get that order right if his source of information were not from the Creator and Designer himself?

Since Moses did **not** get that order right, the question is moot, and Genesis is shown to be wrong. So Genesis most certainly does not present information “from the Creator and Designer himself”.

A Note on Wallace Pratt

In making its point about the order of creation given in Genesis, the *Creator* book states (p. 101):

Noted geologist Wallace Pratt commented: “If I as a geologist were called upon to explain briefly our modern ideas of the origin of the earth and the development of life on it to a simple, pastoral people, such as the tribes to whom the Book of Genesis was addressed, I could hardly do better than follow rather closely much of the language of the first chapter of Genesis.” He also observed that the order as described in Genesis for the origin of the oceans and the emergence of land, as well as for the appearance of marine life, birds, and mammals, is in essence the sequence of the principal divisions of geologic time.

As noted above, the *Creator* book presents no actual fossil evidence to back up Pratt’s claim, nor does it cite any scientific sources. Rather, it relies on the supposed *authority* of Wallace Pratt, a famous petroleum geologist and Humble Oil executive³³⁴ who made the above statement in a 1928 lecture he gave at a church in Houston, Texas. Pratt was not a specialist in paleontology, but was an expert in finding oil.³³⁵ Eventually Pratt’s lecture was given to an audience of stockholders of Humble Oil Co.³³⁶ (now Exxon) and apparently repeated several times over the next 30+ years.³³⁷ From *The Lamp*:

Pratt is as much at home in the worlds of literature and philosophy as he is in those of science and industry. He is intrigued by the power of poetic expression. In “Sermons in Stones,” a lecture which he gave in 1928, he said, “If I as a geologist were called upon to explain briefly our modern ideas of the origin of the earth and the development of life on it to a simple, pastoral people, such as the tribes to whom the Book of Genesis was addressed, I could hardly do better than follow rather closely much of the language of the first chapter of Genesis.” He noted that the order of events—from the origin of the oceans, to the emergence of land, to the appearance of marine life and then of birds and mammals—is essentially the sequence of the principle divisions of geologic time from the Cosmic Era to the Psychozoic [obsolete term for “age of man”]. He was undisturbed by the way Genesis compresses millions of geologic years into six days, for “Are we not assured, indeed, that with the Creator, ‘a day is as a thousand years and a thousand years as a day?’”

Many of the theories of the origin of the earth to which scientists gave credence in 1928 have been sharply modified in the light of new discoveries in geology and astronomy, but not enough, Pratt feels, to disrupt the parallelism with Genesis. “Science is like that,” he says. “No scientific theory is sacrosanct. Somebody has said that the great glory of science is that its truths of today are its absurdities of tomorrow. And that is so. New facts always inspire scientists to devise new hypotheses and to demolish old ones.”

Pratt was a Christian and, apparently, a theistic evolutionist and old-earth creationist, so it’s not surprising that he tried to reconcile Genesis and geology. But as time went on, he realized that the two really don’t match up very well, except in the broadest sense described above. This can be seen in his 1965 lecture “Sermons in Stone”. Nevertheless, Pratt retained some very wrong ideas about Genesis and geology. For example, in his 1965 lecture, he recounted his claim from his 1928 sermon, and said:

Again, Genesis and modern theory agree on the order in which life appeared, on earth, with the lowest forms coming first: “Let the earth bring forth grass.” What simpler form of life would the shepherds of Biblical times know than grass? It is noteworthy, also, that the ancients placed the first life, grass, on the land. We, too, picture the earliest life as appearing on land, not in the sea, although, early life, once established in the sea, evolved for geologic ages before it came later to dominate the land.

Pratt is wrong on almost every count. Grass might be lowly to simple shepherds, but not to

³³⁴ <http://www.geosociety.org/documents/gsa/memorials/v14/Pratt-WE.pdf>

³³⁵ https://en.wikipedia.org/wiki/Wallace_Pratt

³³⁶ W. L. Copithorne, “The Worlds of Wallace Pratt,” *The Lamp*, vol. 53, pp. 11-14, Standard Oil, Fall, 1971. *The Lamp* was a Standard Oil stockholder magazine.

³³⁷ <http://archives.aapg.org/explorer/2000/05may/sermon.pdf> Probably given in 1965: <http://petroleummuseum.org/wp-content/uploads/2013/06/Eugene-Holman-Collection.pdf>

biologists. Its origin was some time between about 120 and 60 million years ago—long after most other types of life originated. The earliest life did not appear on land, but in the sea. Pratt’s last sentence is self-contradictory. One can place no confidence in anything said by someone who contradicts himself in a single sentence.

Pratt then writes:

Then follows in the Genesis narrative the appearance of life in the sea: “Let the waters bring forth abundantly the moving creature that hath life.” After that came the birds: “The fowl of the air that fly above the earth.” Still later, came higher life on land, including mammals; “cattle and creeping things and beast of the earth after his kind.” Modern geology interprets the record to show this same order in evolution.

The last sentence is simply false, as shown above in the list of appearance of life according to science.

Pratt next writes:

The third day, when the lowest form of life appears in the Biblical account, may be equated roughly to our Paleozoic era.

Not even close. As pointed out above, Genesis states that fruit trees were created on the third day. But paleontology dates them as appearing long after the Paleozoic Era ended 251 million years ago, more than 100 million years after dinosaurs first appeared some 230 million years ago.

Pratt continues with this admission:

The account of the fourth and fifth days in Genesis is confused. It does not correspond closely to our fourth and fifth major periods, Mesozoic and Cenozoic time.

Quite so, as even a cursory comparison of the above lists of order of appearances shows. So here, Pratt recants his claim in his 1928 lecture: in important details Genesis and geology do not correspond.

Pratt accepted the fossil evidence for the evolution of man over millions of years, as understood by paleontologists in 1965:

Primitive man was characterized by a flattened skull of relatively small cranial capacity, a retreating forehead and chin, heavy, massive jaws, and a short, thick neck. Modern man, by contrast has a typically near-vertical forehead, a domed occipital region, relatively large cranial capacity, a slender neck, jaws of reduced size and a marked eminence of chin. The most significant of these facial changes is the pronounced growth of the forebrain—the seat of the higher mental faculties...

Previously, as a member of the animal kingdom, man had not excelled in strength, or speed, or size. Physiologically, he was weaker than many of his fellows and he was but indifferently adapted to his environment. He did not rise to dominance through brute force. It was the growth of his intelligence; his tool-making propensity; his social instinct; his resort to mutual aid and to altruism; his gradual establishment of an effective—even though imperfect—“brotherhood of man” that finally enabled man to survive and to rise to supremacy.

Geologically speaking, the period of man’s dominance over his environment has been, so far, of only the briefest duration. Man first became a weapon-making creature perhaps a million years ago.

Clearly then, the Watch Tower Society’s use of Wallace Pratt to argue that Genesis and geology are consistent is an exercise in dishonest, selective quoting.

Contrast the Society’s demonstrated practice with what David Splane said in the November, 2017 JW Broadcasting video:

Splane 3:06: “Now, when a writer quotes an expert, our researchers will ask, ‘Who’s this expert? What’s his reputation? Is he working for a particular organization? Does this organization have an agenda? Is it a special interest group?’ If we find that the goals of the organization are questionable, we won’t use the quote, even if it’s a really good quote.”

The Society has been using the quotation from Wallace Pratt since 1976,³³⁸ where, in a *Watchtower* article on Genesis, it quoted Pratt as its sole reference that Genesis and geology match up well. The odd thing is that in 1976 the Society was dogmatic that the creative days were 7,000 years long, which belief Pratt did not hold to. This again shows how Watch Tower writers fail when it comes to Splane’s claim.

The last time the Society used Pratt as a reference was in 2007.³³⁹ In more recent literature the Society makes no arguments at all about the order of creation—the writer merely declares or assumes that the order is correct and corresponds with modern science.³⁴⁰

³³⁸ *The Watchtower*, January 15, 1976, p. 60.

³³⁹ *The Watchtower*, February 15, 2007, p. 6.

³⁴⁰ cf. *Awake!*, March, 2014.

***Awake!* of September 2006 Special Issue “Is There a Creator?”**

The article considered here appeared in the September 2006 *Awake!* magazine.³⁴¹ Taking up almost the entire magazine, it was a major attempt by the Watch Tower Society to justify its stance against evolution. Most of its arguments were repeated in the 2010 brochure *Was Life Created?* The article appears not to have been written by Harry Peloyan, but many of his fallacious arguments are repeated in it. It also relies heavily on the ideas advanced by the so-called Intelligent Design community, such as those of biochemist Michael Behe. In fact, the subtitle of the issue is: “Is it reasonable to conclude that the design evident in nature requires belief in a Designer, a Creator?” The anti-evolutionists quoted are almost a who’s who of the Intelligent Design community.

In the sections below, section titles taken from the September 2006 *Awake!* are so marked.

***Awake!* – Whom Should You Believe?**

The issue begins with the article “Whom Should You Believe?” This very title promotes a fallacy. It assumes that readers accept evolution or creation based, not on evidence, but on authority: the authority of the Bible as opposed to the authority of scientists. But more specifically, the authority claimed by Jehovah’s Witness leaders to interpret the Bible.

Immediately after the section title, Hebrews 3:4 is quoted:

“Of course, every house is constructed by someone, but he that constructed all things is God.”

Without explicitly saying so, this invokes the idea of Intelligent Design. The article immediately (p. 3) uses the notion:

DO YOU agree with the logic of this Bible writer? Mankind has experienced some 2,000 years of scientific advancement since that verse was penned. Does anyone still think that the design evident in nature requires belief in a Designer, a Creator—God?

The article then points out that some 80% of United States citizens believe that God created the universe and that some 40% of scientists also believe this, as well as that this God answers prayers. The article is clearly suggesting that readers ought to believe in the Christian creator God merely because others do. The article concludes with the good suggestion that readers investigate the evidence for themselves and reach their own conclusions.

Investigating and making one’s own conclusions is exactly what people ought to do. But a Jehovah’s Witness who does this and reaches conclusions other than those dictated by Watch Tower tradition, and expresses them, will almost certainly be disfellowshipped. The Society is disingenuous and hypocritical here.

At the bottom of this title page (p. 3) is a box explaining that Jehovah’s Witnesses are not the usual sort of creationists so common in the U.S. It explains that JW’s are not *young-earth* creationists as are so many Evangelicals in the U.S. It muddies its arguments by conflating belief in young-earth creationism with belief in “false doctrines” (i.e., religious beliefs that JW’s consider false, such as the Trinity) and with involvement in politics. Of course, such beliefs and practices have nothing to do with creationism.

Creationism is simply the belief that some supernatural being created the universe. The box fails to explain what sort of creationists JW’s are—and for good reason. JW’s are what most commentators call

³⁴¹ <https://www.jw.org/en/publications/magazines/g200609/>

old-earth creationists, i.e., they accept the scientific conclusion that the earth and universe are some 4.6 and 13.8 billion years old. However, as explained on page 97 of this paper JW's have traditionally held an odd combination of beliefs—that the earth is very old, but life upon it is much younger. Since about 1990, the Watch Tower Society has carefully avoided giving any suggestion of just how old life is. The belief until the 1980s was that life is no more than about 34,000 years old, but post-1990 statements seem to allow for belief that life is far older. So it appears that the Society wants to avoid the stigma of young-earth creationism by implying that JW's are not creationists at all.

Awake! – What Does Nature Teach?

This section (pp. 4-8) gives examples of amazing ‘engineering’ in the animal kingdom and argues that such amazing things must be the handiwork of a supremely intelligent Creator who deserves credit for his designs. It says that human engineers often imitate these wondrous designs. But as usual, the arguments are flawed and fail to consider all aspects of the examples. Let's consider each example.

Awake! – Learning From a Whale's Flippers

This example (p. 4) considers the humpback whale's flippers. On the leading and trailing edges they have bumps, or tubercles, that increase maneuverability and decrease drag by creating vortices that decrease turbulence. This must be divine design because the tubercles allow the whale to better maneuver to feed on schools of fish and crustaceans.

But even a cursory look at the humpback whale's anatomy and the structure of all manner of other whales and of birds shows that this argument is fallacious. The humpback whale's skin contains a great many of these tubercles, mainly concentrated on the head, flippers and tail flukes.³⁴² The whale is not a fast swimmer, as whales go, so the head and fluke tubercles must not help it with swimming fast. From an evolutionary point of view, the whale likely developed these bumps as random mutations, and then the ones on the flippers became gradually set in place because they were advantageous for feeding. Tubercles elsewhere just went along for the ride. The article claims that aircraft wings will likely adopt having bumps on the leading and trailing edges. Now, some sixteen years later, that has not happened. Most biologists would attribute these tubercles to evolutionary innovation.

Furthermore, if a Creator decided that flipper and wing tubercles were good design practice, why do no other swimming or flying creatures have them? Surely birds would benefit. Yet in the very next subtitle the article says that “aircraft wings already mimic the shape of birds' wings”, completely glossing over the fact that these ‘divinely designed’ wings have no tubercles, and that by the arguments given in the previous few paragraphs bird wings *should* have tubercles. By the same token, no other whales have tubercles on their bodies or flippers, yet many other whales swim much faster than do humpbacks. The blue whale is the fastest of all, and is extremely well streamlined.

This focusing on particular examples of ‘design’ while overlooking the wider implications of the argument is typical of creationist rhetoric. Young-earth creationists, for example, often argue that the sedimentary rock features in the Grand Canyon prove that Noah's Flood was a real event, but they ignore the fact that a detailed look at the rocks thoroughly disproves their claims, and they fail to account for the fact that a giant worldwide Flood a few thousand years ago would have left massive, unmistakable traces everywhere, but which are simply not found. Christian geologists who wanted to interpret all of geology in terms of Flood-lain “diluvium” figured this out 200 years ago.

³⁴² <https://www.pinterest.it/pin/316800155012545079/>

Similarly, Fundamentalists such as the JWs have traditionally taught that pre-Flood animals did not eat other animals. Yet the humpback whale eats fish and crustaceans, and most other whales are also predators. Did God, after the Flood, redesign all whales and thousands of other sorts of animals so as to be well-designed predators? Creationists usually fail to think far enough to consider such contradictions to their overall beliefs.

Per its usual practice, *Awake!* quotes supposedly scientific sources, but gives no source references. It refers to the journal *Natural History*³⁴³ and to “biomechanics expert John Long”, who stated in a 2004 *Science* magazine article: “In 10 years we may well see every single jetliner with the bumps of humpback whale flippers.”³⁴⁴ I contacted John Long to elicit his comments on why nothing has been done in fifteen years to implement bumps on aircraft wings. He said that his impression, after talks by one of the wing-tubercle inventors with some aircraft makers went nowhere, was that they went nowhere due to “not invented here” syndrome plus simple inertia. However, a Canadian company called Whalepower Corporation³⁴⁵ has patented “tubercle technology” and has begun to sell it to makers of wind turbines, certain types of fans, etc., but not to aircraft makers.

***Awake!* – Mimicking Seagulls’ Wings**

As mentioned above, this section (p. 5) suggests that the design of birds’ wings is so marvelous that it must be the work of a Supreme Designer. But *Awake!* has already argued that wings with no tubercles are non-optimum designs. Since no birds have wing tubercles, are birds not designed perfectly? Apparently so. Where then, is room for a Creator who creates imperfect life forms?

The section claims that “aircraft wings already mimic the shape of birds’ wings”. This is only true of the *cross section* of *some* wings from leading to trailing edge. The cross section toward the leading edge is thicker, and the upper surface is more strongly curved outward than is the lower surface, thus giving higher lift than a symmetrical cross section. But airplane wings do not *require* this cross section: stunt planes spend a good deal of time flying upside down, so their wings are symmetrical in cross section. Furthermore, the wings of flying creatures do not have to have the shape of birds’ wings. Bats have quite different wing structures and they fly quite well with just skin stretched over bones. The extinct pterosaurs existed for more than 140 million years and, according to recent research, were extremely good fliers, despite having ‘designs’ radically different from those of birds and bats.³⁴⁶ Recent research suggests that pterosaurs were better fliers than birds in some respects.

***Awake!* – Copying the Gecko’s Feet**

This section makes the usual argument that “creation is so marvelous that it must be the Creator’s handiwork.” It can just as well be argued that the design is a product of the remarkable ability of mutations and natural selection to cause animal populations to adapt to their environments.³⁴⁷

³⁴³ <http://digitallibrary.amnh.org/bitstream/handle/2246/6510/NH113n05.pdf?sequence=5&isAllowed=y>
<http://www.naturalhistorymag.com/biomechanics/082067/as-the-whale-turns> See section Biomechanics: June 2004, Vol. 113, Number 5, pp. 24-25 article “As the Whale Turns” by Adam Summers.

³⁴⁴ <https://www.sciencemag.org/news/2004/05/flipped-flight> See *Science*, 21 May 2004, Vol. 304, p. 1106.

³⁴⁵ <https://whalepowercorp.wordpress.com/>

³⁴⁶ <https://www.scientificamerican.com/article/pterosaurs-were-monsters-of-the-mesozoic-skies/>

³⁴⁷ “Adaptation”, *Scientific American*, September 1978, p. 213.

For the whole article see http://dynamics.org/~altenber/LIBRARY/REPRINTS/Lewontin_Adaptation.1978.pdf

Awake! – The Boxfish

A color graphic (p. 7) shows pictures of a boxy-shaped fish and a boxy car from Mercedes-Benz. The accompanying text says:

The surprisingly low-drag design of the boxfish inspired a vehicle concept.

There is no accompanying discussion, but the overall idea is that the fact that Mercedes used the boxfish as a model to build a low-drag, stable car, is another indicator of Divine Design in the animal world. A July 2009 *Awake!* article (p. 10) expanded on this. The problem here is similar to that of the humpback whale’s bumpy flippers: there are many examples of fish that swim far faster than the boxfish (the black marlin is said to be the fastest of all fish, swimming up to 80 miles per hour³⁴⁸). The article says that the boxfish swims fast, up to six times its body length per second, but this is grasping straws at its finest: the fish averages about 3 inches long,³⁴⁹ so its maximum speed must be about 18 inches per second (about 1 mile per hour). Compare that with the 80 times faster black marlin, which can in no way be described as boxy. So if the Designer’s goal were to make the boxfish fast and stable in swimming, as *Awake!* implies, He certainly missed the mark.

Awake! – Who Deserves the Credit?

This section reiterates the argument that “marvelous design requires a Designer”. It refers to statements by microbiologist Michael Behe to the effect that “Design is so obvious”. But Behe is not making his claim so much as a scientist as a Christian believer. Behe is a member of the religious organization called “The Discovery Institute”, the prime promoter of the “Intelligent Design” movement. This institute pretends to be a science-based organization, but its founding documents, as well as its everyday practices, prove that it is religious to its core, having the goal of installing some form of conservative Christianity as the core of U.S. culture and politics.

Furthermore, Behe is an evolutionist, in that he accepts that life has descended from a common ancestor.³⁵⁰ He feels that his Christian God guided evolution, so Behe is a theistic evolutionist. Since his statement in a 2005 *New York Times* article, the Watch Tower Society seems to have discovered that Behe is an evolutionist and has not quoted him since about 2010.

Fatal Flaw in the Argument That the Loving Christian God Is the Creator of Everything

The argument that “design requires a Supreme Designer” and that that Designer is the Christian/Hebrew God has a major flaw: according to the New Testament passage at 1 John 4:8, 16, “God is love”. As the Creator and Parent of all living things, He is so lovingly cognizant of every creature that, according to Matthew 10:29:

Two sparrows sell for a coin of small value, do they not? Yet not one of them will fall to the ground without your Father’s knowledge.

The history of the last 500 million years of life, with the constant conflict between predators and prey, and all the pain and suffering that history entails, proves unarguably that any postulated Creator is far from loving. A loving Creator, by definition, could not create a world in which the daily lot of so many life forms is to suffer a nature “red in tooth and claw”. Thus, either the God of the Bible is not loving, or he does not exist.

³⁴⁸ <https://www.thoughtco.com/worlds-fastest-fish-2291602>

³⁴⁹ <https://www.liveaquaria.com/category/24/>

³⁵⁰ <http://www.apologeticspress.org/APContent.aspx?article=2555>

An alternative is that there are one or more other sorts of Creators, but it is obvious that none of these are the Bible’s God, and that they cannot be loving. One might propose any number of these sorts of ‘creators’ or ‘gods’, such as a Deistic god who created the universe and then went off to tend to other business, or some entity altogether different. Some Christians assign the word “God” to these; creation by them can be called forms of theistic evolution.

Awake! – Did God Use Evolution to Create Life?

This article attempts to argue that God could not have used “evolution” to create life. But as usual, the Watch Tower author uses a wrong definition of evolution to argue his case. He states:

The word is most commonly used, though, to describe the theory that life arose from inanimate chemicals, formed into self-replicating cells, and slowly developed into more and more complex creatures, with man being the most intelligent of its productions. This third notion is what is meant by the term “evolution” as used in this article.

But as shown above, the Theory of Evolution only considers the evolution of life *after* its origin; the origin itself is unknown and studied under the rubric of *abiogenesis* (see page 83). So right off the bat the author is wrong in his premises. He is using his own wrong and self-serving definition of evolution. His argument is therefore a very big straw man. The reader should keep in mind that, whether deliberately or due to sheer ignorance, **the Watch Tower author is arguing from a wrong premise.**

The article describes several forms of theistic evolution fairly accurately, so the author cannot claim ignorance of this subject.

Although Watch Tower writers do not seem to know it, one of the mainstays of their rhetoric against evolution is the notion of a *Great Chain of Being*,³⁵¹ which “is a hierarchical structure of all matter and life, thought in medieval Christianity to have been decreed by God. The chain starts with God and progresses downward to angels, humans, animals, plants, and minerals.” Allied with this is the notion of upward progress in biology (orthogenesis³⁵² or evolutionary progression). “Vitalism”³⁵³ is often an important part of this. These ideas were part of much metaphysical thought in biology and general Western culture prior to about 1950, and resulted in now-obsolete ideas such as “the missing link”, that ‘creation’ and/or evolution have a built-in tendency to “progress higher”, the idea of *The March of Progress*,³⁵⁴ and other ideas now abandoned by professional biologists. The ideas are strongly ingrained in popular culture, so that popular science writers often mistakenly use them, and even “museum displays and textbook illustrations continue to give the impression of progress in evolution.” But evolution is strictly an undirected process, driven partly by random mutations and other random genetic changes, and partly by the vagaries of natural selection, which in turn depends on the vagaries of environmental conditions. An informed reader can pick out many examples where a Watch Tower writer has unconsciously invoked the *Great Chain of Being*.

Awake! – The Marriage of Teachings—Does It Work?

This section uses a logical fallacy known as “the slippery slope”.³⁵⁵ It argues against theistic evolution by invoking various Bible accounts and asserting that they are literal, completely ignoring the

³⁵¹ https://en.wikipedia.org/wiki/Great_chain_of_being

³⁵² <https://en.wikipedia.org/wiki/Orthogenesis>

³⁵³ <https://en.wikipedia.org/wiki/Vitalism>

³⁵⁴ https://en.wikipedia.org/wiki/March_of_Progress

³⁵⁵ https://en.wikipedia.org/wiki/Slippery_slope

great body of argumentation set forth by Christian scholars as to why non-literal interpretation is really the only way to accept extremely well-established science along with some form of the Bible accounts. The problem is that to reject science in favor of a literal reading of the Bible would be the same as accepting the Bible's literal statements that the earth is flat and rejecting all of modern astronomy. Watch Tower tradition has found ways to rationalize that various seemingly literal statements are really figurative, but for some reason they draw the line at evolution. Similarly, they refuse to consider the story of Noah's Flood as anything but real history.

The basic argument is that Jesus accepted Genesis as literal, and that the doctrines of "original sin" and the "ransom sacrifice" would be meaningless otherwise:

To undermine belief in the creation account in Genesis is to undermine the very foundations of the Christian faith. Evolutionary theory and the teachings of Christ are incompatible.

This argument is valid, but the real implication is that these doctrines are meaningless because they are false.

***Awake!* – Faith Based on a Solid Foundation**

This section argues that, since the Bible has been proved true and accurate in all respects, it should be believed:

Time and again the Bible text has been vindicated. When the Bible touches on history, health, and science, its accounts have repeatedly been proved reliable.

Unfortunately the author fails to distinguish between Watch Tower tradition and what the Bible really says or means. And as repeatedly shown in various sections of this paper, **the Bible is not reliable** (see page 120 for more information). Rather, it contains all manner of scientific and historical inaccuracies. That Watch Tower writers are skilled in marshaling all manner of rationalizations to convince their JW readers does not in any way mean that their rationalizations are valid.

***Awake!* – An Interview With A Biochemist**

Awake! next interviews the creationist biologist Michael Behe, who in 1996 published *Darwin's Black Box*.³⁵⁶ The book appeals to the religious sensibilities of non-scientists far more strongly than to the scientific sensibilities of scientists, mainly because it appeals to *The Argument From Personal Incredulity* (see page 83). This means an argument that appeals to the childish notion that if someone cannot understand something, or for emotional reasons refuses to acknowledge facts, the argument is not true: "I can't believe X, therefore X is false."

Between 1996 and when the *Awake!* article was published in 2006, many scientists published disproofs of Behe's claims. A major blow to his claims came in late 2005, when Behe was called on to testify in a court case where the Dover, Pennsylvania school board was taken to task for attempting to insert the religious notion of "Intelligent Design" into classrooms. Behe had claimed that it was impossible for the immune system, with all its complexity, to have evolved, and that scientists had never published an evolutionary scenario explaining how it could have evolved. The plaintiffs' attorneys then built a stack of books and science articles doing exactly what Behe had claimed they had not. Behe's false claim figured in the final court opinion where Judge Jones excoriated Intelligent Design defense witnesses like Behe for lying under oath.³⁵⁷

³⁵⁶ *Darwin's Black Box—The Biochemical Challenge to Evolution*, Michael Behe, Free Press, 2006.

³⁵⁷ cf. <https://ncse.ngo/immunology-spotlight-dover-id-trial>

Pretty much all of Behe's arguments against evolution in *Darwin's Black Box* have been debunked by many scientists. Behe has written other anti-evolution books, which have been thoroughly debunked. An article on RationalWiki states:³⁵⁸

The Lehigh University Department of Biological Sciences, where Behe is a tenured professor, has seen fit to prominently dissociate itself from Behe's views on intelligent design. Behe acknowledges that most of his colleagues disagree with him.

As mentioned above, *Behe also accepts theistic evolution*, since he accepts the notion of the common descent of all life. He is a Fellow of the Discovery Institute.

All told, Michael Behe is a witness *against* the Watch Tower Society's position.

Awake! – Is Evolution a Fact?

This article (p. 13) is largely based on arguments promoted by the so-called Intelligent Design community, under the auspices of the religious organization known as the Discovery Institute.

The article argues that, while “microevolution” is a fact, “macroevolution” is not (see page 59 for why this claim is false). It questions mutations, natural selection and the fossil record. Notably, the article completely ignores the genetic record of evolution, which most biologists say provides the strongest evidence of all.

The article argues that the fact that decades of mutation experiments have failed to produce any new species proves that production of new species by mutations is impossible. This is like arguing that observing a child for a minute and seeing no growth proves that the child cannot grow into an adult in another ten years. *Awake!*'s argument is demonstrably false, because in nature thousands of new species certainly have been produced. The difference between man-directed experiments and natural ones is time and the number of individuals in a population subject to mutation. Here is just one example:

In the Hawaiian Islands there exist some 800 species of fruit flies. Genetic tests indicate that they all descended from one or a handful of common ancestors over a period of perhaps ten million of years.³⁵⁹ They are mostly unique species because most do not interbreed, and the majority could not interbreed even if they wanted to. The Islands are part of the chain of islands and underwater seamounts (drowned islands) called the Emperor Seamount Chain, which extends thousands of miles from the Big Island all the way to the Kamchatka Peninsula. The oldest seamounts, about to dive under Kamchatka along with the Pacific tectonic plate, are some 80 million years old. The geological and paleontological evidence is that at some point a few founder populations of fruit flies landed on various islands, and over millions more years gradually evolved into the 800 species we see today. This is but one of the hundreds of facts that provide extremely strong evidence for common descent—evolution.

Of course, *Awake!* simply ignores all facts like this.

On the other hand, the notion that some Creator individually created 800 species of fruit flies is preposterous.

So *Awake!* makes a fundamental error in logic by comparing a process that takes tens of millions of years with laboratory experiments done over a few decades. Again we see gross inaccuracy in Watch Tower argumentation.

³⁵⁸ https://rationalwiki.org/wiki/Michael_Behe

³⁵⁹ <https://www.ncbi.nlm.nih.gov/books/NBK208861/>
<https://www.sciencedaily.com/releases/2016/08/160819084620.htm>

The article goes on to argue against “macroevolution”:

[Darwin wrote:] “I view all beings not as special creations, but as the lineal descendants of some few beings.” Darwin said that over vast periods of time, these original “few beings,” or so-called simple life-forms, slowly evolved—by means of “extremely slight modifications”—into the millions of different forms of life on earth. Evolutionists teach that these small changes accumulated and produced the big changes needed to make fish into amphibians and apes into men. These proposed big changes are referred to as macroevolution.

As mentioned earlier in this paper (p. 83), when dealing with the subject of evolution Watch Tower writers almost always misrepresent it by conflating the scientific Theory of Evolution³⁶⁰ with abiogenesis,³⁶¹ even though virtually all expositions on evolution by scientists, from Charles Darwin onward, are careful to distinguish between the *Theory* of Evolution (change in populations through time) and various *hypotheses*—which are not *scientific theories*—of abiogenesis (the origin of life). The Theory of Evolution has a great deal of evidence behind it (fossil record, DNA studies, geological timetable), whereas abiogenesis is far more speculative. The two are not sides of the same coin.

So even though *Awake!* is arguing for the straw man that ‘evolution’ includes the origin of life, the origin of the universe, the evolution of the universe, and who knows what else?, it manages to get the idea of macroevolution about right.

The rest of the article argues that there is no valid evidence for macroevolution. It should be noted that the article never actually gives clear evidence against macroevolution, but merely quotes religiously motivated critics on why they believe macroevolution does not occur. Nor does the article give any evidence in favor of its idea of creationism—which it never defines or explains. The author’s method appears to be to knock down macroevolution and let the reader fill in the rest with his own ideas of creationism.

The author asks:

Is the evidence for macroevolution so strong that it should be considered a fact?

Yes, the evidence is truly mountainous, which I will only touch on briefly here. Many books and thousands of articles in scientific journals going back 160 years have been written about it. For the most part, only people with religious motives reject this evidence—not because they have better evidence, but because if they did not reject it their religious faith would collapse.

***Awake!* – Can Mutations Produce New Species?**

The article repeats the fallacious argument that the fact that decades of mutation experiments have failed to produce any new species proves that production of new species by mutations is impossible. But all that proves is that a few decades is not generally long enough to produce viable new species. And as shown above, we have actual examples of the evolution of new species, such as some 800 new species of fruit fly evolving in Hawaii over several million years.³⁶²

Of course, some will object that those 800 species of fruit flies are still fruit flies. True, but that ignores the fact that these *new* species can not or will not interbreed. And even most biblical creationists agree that different ‘kinds’ are defined by their inability to interbreed with one another. So are these 800 new species different ‘kinds’? I doubt that many creationists would argue that they are all the same ‘kind’.

³⁶⁰ cf. <https://en.wikipedia.org/wiki/Evolution>

³⁶¹ cf. <https://en.wikipedia.org/wiki/Abiogenesis>

³⁶² See also <http://www.talkorigins.org/faqs/faq-speciation.html> <http://www.talkorigins.org/indexcc/CB/CB910.html> Using a search engine for something like “speciation examples” yields much information.

One of *Awake!*'s references is a Jehovah's Witness scientist named Wolf-Ekkehard Lönnig, who of course supports the Watch Tower Society's position on evolution. Based on his work, *Awake!* states that:

The data now gathered from some 100 years of mutation research in general and 70 years of mutation breeding in particular enable scientists to draw conclusions regarding the ability of mutations to produce new species.

But as shown above in the above-referenced footnotes, speciation events *have* been observed in the last 100 years.

And of course, 100 years of fooling around with mutations is a drop in the bucket compared to the millions of years available to natural evolution. It is like claiming that observing the erosion of a granite mountain for 100 years and seeing no observable changes proves that mountains do not erode down to the ground. *Awake!* depends on Lönnig's false conclusions:

After examining the evidence, Lönnig concluded: "Mutations cannot transform an original species [of plant or animal] into an entirely new one. This conclusion agrees with all the experiences and results of mutation research of the 20th century taken together as well as with the laws of probability. Thus, the law of recurrent variation implies that genetically properly defined species have real boundaries that cannot be abolished or transgressed by accidental mutations.

But Lönnig has snuck in an impossible condition: "mutations cannot transform an original species into an *entirely new one*." The implication is that a transformation must be all in one go. But no evolutionary biologist makes such a claim. Indeed, this is an extreme form of the "hopeful monster hypothesis" which was proposed in the 1940s by biologist Richard Goldschmidt³⁶³ and taken to a speculative extreme by paleontologist Otto Schindewolf (he later dropped his speculation) by proposing that the first bird arose by hatching from a reptile egg. No modern scientists accept such ideas, but the discovery of regulatory genes in the last 20 years suggests that surprisingly large changes in form can arise by tiny mutations in these genes. So Lönnig's conclusion is yet another straw man, which *Awake!*'s author blindly runs with.

Awake! finishes with an obviously false conclusion:

Consider the implications of the above facts. If highly trained scientists are unable to produce new species by artificially inducing and selecting favorable mutations, is it likely that an unintelligent process would do a better job? If research shows that mutations cannot transform an original species into an entirely new one, then how, exactly, was macroevolution supposed to have taken place?

The conclusion is false because the research in question merely showed that, in some 100 years, mutations *did* not make an entirely new species—something no evolutionary biologist would ever claim—but showed nothing about whether mutations *could* make a new species over millions of years. And once again, the 800 non-interbreeding fruit fly species in Hawaii prove that mutations can indeed make new species.

***Awake!* – Does Natural Selection Lead to the Creation of New Species?**

This section basically repeats the argument of the above section, except this time with respect to 'Darwin's Finches' on the Galapagos Islands. It makes the same mistakes and false conclusions.

³⁶³ https://rationalwiki.org/wiki/Hopeful_monster

***Awake!* – Does the Fossil Record Document Macroevolutionary Changes?**

This section is really a dog's breakfast of argumentation. It is self-contradictory and virtually incoherent, as I will show.

Referring to a brochure published in 1999 by the National Academy of Sciences in the U.S., the section begins:

The previously mentioned NAS brochure leaves the reader with the impression that the fossils found by scientists more than adequately document macroevolution. It declares: "So many intermediate forms have been discovered between fish and amphibians, between amphibians and reptiles, between reptiles and mammals, and along the primate lines of descent that it often is difficult to identify categorically when the transition occurs from one to another particular species."

The NAS statement is true. Dozens of documents on the website talkorigins.org and elsewhere list hundreds of these intermediate forms.³⁶⁴ Many, many books and scientific articles do the same.³⁶⁵ See page 79 for pictures of such intermediate forms.

A point of clarification: many scientists use the term "transitional form" to describe what the NAS brochure terms "intermediate form". The latter simply refers to the fact that certain animal and plant bodies have structures that have some characteristics of earlier or later bodies, as dated by various forms of geological dating. It does not suggest that a body has evolved from or into another body form. The former suggests not only a *structural* intermediate, but an intermediate in *descent*, in that the particular body has evolved from an earlier bodily form or will later evolve into a related but different form, i.e., is transitioning from one distinct species into another. Because the fossil record is so sparse, paleontologists can never be certain that a particular animal or plant fossil is truly transitional, so the word 'intermediate' is sometimes preferable.

Awake! blunders on:

This confident statement is quite surprising. Why? In 2004, *National Geographic* described the fossil record as being like "a film of evolution from which 999 of every 1,000 frames have been lost on the cutting-room floor." Do the remaining one-in-a-thousand "frames" really document the process of macroevolution? What does the fossil record actually show? Niles Eldredge, a staunch evolutionist, admits that the record shows that for long periods of time, "little or no evolutionary change accumulates in most species."

The author is so ignorant that he thinks that an extremely sparse and incomplete fossil record can show that little or no evolutionary change has accumulated while simultaneously showing a host of intermediate forms, which on the whole document a sequence in time as described by the NAS brochure. The author's argument is self-contradictory and wrong.

The fact is that incomplete and sparse records of any sort can be filled in with a good deal of certainty by reasonably intelligent people. For example:

if you can read this, don't get the notions about missing transitional forms in the evolutionary tree

Similarly, a film of a football game missing 999 of 1,000 frames can be used to figure out all manner of facts about the game—how it is played, that there are two teams and who they are, who won the game, etc.

So it is with the paleontological fossil record. Many fossils can be accurately dated and so placed in a sequence from oldest to newest. Such sequences, when put all together, give an overall picture of the

³⁶⁴ <http://www.talkorigins.org/faqs/faq-transitional.html>

³⁶⁵ cf. *Evolution: What the Fossils Say and Why It Matters*, 2nd edition, Donald Prothero, Columbia University Press, 2017.

history of life. That history shows a progression: microscopic organisms existed from at least 3.5 billion years ago through today, multicelled organisms appeared between 1,000 and 600 million years ago, life with hard parts appeared just before the early Cambrian Era about 550 million years ago, fish-like life appeared about 530 million years ago, fish-to-amphibian intermediate forms 375 million, amphibian-like life about 365 million, reptile-like life about 300 million, dinosaur-like and pterosaurs 230 million, mammal-like in a multitude of forms between 300 and 200 million, bird-like forms a bit earlier than 150 million, and so forth. Only young-earth creationists deny this sequence, and not because of science but because of their *a priori* interpretation of Genesis that the entire universe is only some 6,000 years old.

Awake!'s author seems to think that the Theory of Evolution *requires* gradual evolution in slow, continuous steps over millions of years, so that showing that the fossil record contains jumps and long periods of stasis contradicts 'evolution'. But that bespeaks gross ignorance of the actual Theory—not the caricature of the Theory that Watch Tower writers and other creationists have built. In 1972 paleontologists Niles Eldredge and Stephen Jay Gould originated the theory of "punctuated equilibria",³⁶⁶ which seems to have thoroughly confused *Awake!*'s author along with other creationists, since he seems to have learned most of what he knows about evolution from creationist authors. The basic notion of this theory is that in many cases, once a species becomes established, it *tends* to remain stable for long periods of time. This is because, with a fairly stable environment, there is little pressure from natural selection for change. But when the environment changes, the pressure increases and relatively rapid evolution can occur. The reason there are few examples of this rapid change is the sparsity of the geological record—it is less likely that evolutionary change occurring over a few tens of thousands of years will be recorded in the fossil record compared to the stasis that occurs over many millions of years. Nevertheless, Eldredge and Gould have made it clear that their theory in no way contradicts the fact that there are plenty of examples in the fossil record of *gradual* change over thousands to millions of years. Biologists have argued for five decades about how important gradual evolution is compared with punctuated evolution, but they all acknowledge a mix of both.

Note that Eldredge clearly said that "**little** ... change accumulates"—not that **no** change accumulates. Big difference. *Awake!*'s author ignores this crucial point because it completely debunks his argument. This is yet another example of how Watch Tower writers quote scientists out of context and deliberately miss crucial points.

Awake!'s claim rests on several misconceptions originated by young-earth creationists. The fossil record contains a wide variety of evidence about gradual versus relatively sudden changes in populations. Sometimes there are long periods of gradual change, sometimes periods of relative stasis followed by extinction and then replacement by other species, and sometimes a combination of both. The way to understand this is to read material by real scientists—not creationists—and *look at the actual evidence* rather than the straw man claims usually set forth by creationists. For example, the above-referenced book by paleontologist Donald Prothero sets forth a great deal of fossil evidence showing these facts.³⁶⁷ There are plenty of other resources on this. Other parts of this paper provide copious references.

The author's argument is like someone discovering a batch of photographs in an abandoned house that document the growth of the former occupant's children, and claiming that because the photos show the children at discrete moments in time, those children could not possibly have grown up, because there are no photos showing gradual change. Stupid? Yes.

³⁶⁶ https://en.wikipedia.org/wiki/Punctuated_equilibrium

³⁶⁷ For those too lazy to read a book, a video might help: <https://www.youtube.com/watch?v=DjFgcOId-ZY>

Awake! continues with this misleading statement:

To date, scientists worldwide have unearthed and cataloged some 200 million large fossils and billions of microfossils. Many researchers agree that this vast and detailed record shows that all the major groups of animals appeared suddenly and remained virtually unchanged, with many species disappearing as suddenly as they arrived.

The author is deceptive because he fails to define “major group of animals”. He and the Watch Tower Society cannot even define a biblical ‘kind’, so they cannot logically presume to talk about major groups of ‘kinds’. Various creationists—young-earth, old-earth, and wafflers such as many Intelligent Design proponents—have made the same deliberate ‘mistake’ for decades. That way, whenever evidence pops up that discredits a position, they reformulate what they vaguely mean by “group” and “kind”.

Awake! goes on once again to quote a member of the Discovery Institute, this time a young-earth creationist:

After reviewing the evidence of the fossil record, biologist Jonathan Wells writes: “At the level of kingdoms, phyla, and classes, descent with modification from common ancestors is obviously not an observed fact. To judge from the fossil and molecular evidence, it’s not even a well-supported theory.”

Jonathan Wells is a member of Sun Myung Moon’s Unification Church (the “Moonies”).³⁶⁸ He is no more a reputable scientist than he is a Christian, having been caught out many times lying in his written works. *Awake!*’s using Wells as a reference is akin to the Society’s secretly joining itself to the United Nations for a decade. Wells, as a young-earth creationist, obviously disagrees with Michael Behe’s acceptance of descent with modification.

It’s really astonishing how Watch Tower writers will use any source reference to support their views, hiding the disreputable credentials of people like Wells. This is nothing new.

³⁶⁸ [https://en.wikipedia.org/wiki/Jonathan_Wells_\(intelligent_design_advocate\)](https://en.wikipedia.org/wiki/Jonathan_Wells_(intelligent_design_advocate))

Brochure “*The Origin of Life—Five Questions Worth Asking*”

This brochure from 2010, along with its companion brochure *Was Life Created?*, was the next installment after the 2006 *Awake!* discussed above, in the Society’s ongoing attempts to refute evolution and support its idea of creation. As with all previous Watch Tower publications on the subject, inaccuracy dominates the argumentation. As will be shown, the inaccuracy is often deliberate, because Watch Tower writers often do not want their readers to know the facts. Facts are often detrimental to the main message of Watch Tower leaders—that they are divinely appointed to speak in God’s name. This dishonesty is not only hypocritical, but is a betrayal of the God these men claim to speak for. Note what *The Watchtower* once argued:³⁶⁹

Can You Be True to God, Yet Hide the Facts?

WHAT results when a lie is let go unchallenged? Does not silence help the lie to pass as truth, to have freer sway to influence many, perhaps to their serious harm? ... When persons are in great danger from a source that they do not suspect or are being misled by those they consider their friends, is it an unkindness to warn them?

What Faithfulness Requires of Us

Do you believe that lies should not go unchallenged? ... Perhaps you agree that wrongdoing should be exposed. But what if the wrongdoing is done by religious people, perhaps persons in your own church? Will faithfulness to God cause you to speak out for what is right?

The material below shows that the author of the *Origin* brochure is guilty of wrongdoing by hiding facts about both evolution and creation. Of course, much of the rest of this paper exposes similar wrongdoing.³⁷⁰ The brochure’s purpose is to argue that creation by the Bible God is a fact, but that naturalistic evolution is not. Only a fair and full presentation of the facts about both creation and evolution can allow a sincere reader to make a choice.

Unlike the 2006 *Awake!*, the *Origin* brochure does not quote Intelligent Design creationists such as Michael Behe—apparently Watch Tower writers learned that Behe is a theistic evolutionist and accepts common descent. He is not mentioned in Watch Tower publications after 2010. The 2005 Dover, Pennsylvania court decision stating that ID is a religious view made quoting ID proponents much less attractive—but its main line of argumentation is essentially what Watch Tower writers have used since the 1960s. Because most of the arguments are repeats of old material, I will generally focus on the arguments that have a newer component.

As with earlier treatments, the brochure’s writers continue improperly to lump abiogenesis with the Theory of Evolution, along with other disciplines that entail a very different sort of evolution, such as cosmology, astronomy and earth history. They deliberately confuse various senses of “evolution” with the specific biological Theory of Evolution, which by definition has only to do with how populations of life forms changed *after* life originated in some unknown manner. One would think that the brochure’s title—“The Origin of Life”—would motivate the writers to concentrate on abiogenesis, but one would be wrong.

³⁶⁹ *The Watchtower*, January 15, 1974, pp. 35-37.

³⁷⁰ Other critiques of the *Origin* brochure:

[http://www.tj-encyclopedie.org/Discussion:L%27Origine de la Vie](http://www.tj-encyclopedie.org/Discussion:L%27Origine%20de%20la%20Vie)

<https://www.mediafire.com/file/fzjmfambyro0fof/Weighed.pdf/file>

[https://www.academia.edu/41333112/ The Origin of Life Five Questions Worth Asking FAILS TO DELIVER](https://www.academia.edu/41333112/The-Origin-of-Life-Five-Questions-Worth-Asking-FAILS-TO-DELIVER)

A Student's Dilemma

The brochure begins with a fallacy known as the False Dilemma³⁷¹ (p. 3). A hypothetical student Peter, a Jehovah's Witness, is being presented with the Theory of Evolution in school. The author writes:

Peter faces a dilemma. His parents have taught him that God created the earth and all life on it. They say that the Bible's account of creation is trustworthy and that evolution is simply a theory—one not supported by the evidence. Peter's teacher and his parents all mean well. But whom should Peter believe?

The false dilemma has been pointed out several times earlier in this paper: the statement “evolution is simply a theory” is false and misleading, because the use of “theory” in “Theory of Evolution” is in the *scientific* sense, not in the sense of common vernacular as equivalent to hypothesis, speculation or guess. Given that the phrase “theory of evolution” has just one scientific meaning, but “evolution” in the common vernacular has several meanings—not just the false one “theory of evolution=guess”—Peter's dilemma has several branches. Is he supposed to reject biological evolution, cosmological evolution, or what?

Furthermore, the brochure presents “evolution” as if it is a *religious* belief like those that Jehovah's Witnesses derive from the Bible. But belief in the Bible is mainly *faith*—which is essentially belief without evidence or in the face of contrary evidence (see the material beginning on page 294 of this paper for evidence that the Bible cannot be trusted for scientific accuracy)—whereas “belief in evolution”, in the scientific Theory of Evolution, is based not on unevidenced faith but on acceptance of the wealth of physical evidence that scientists have accumulated over some 200 years.

The brochure continues reasonably:

What should Peter and students like him do? Would you not agree that they really need to make up their own minds on this matter? They need to examine the evidence for evolution and for creation and then decide for themselves which they will believe.

Very good. But the brochure fails to deliver such evidence. Rather, in the usual Watch Tower fashion, it present a *caricature* of the evidence for evolution along with demonstrably false arguments against it. This caricature is seen in the brochure's further statement:

The purpose of this brochure is to examine claims made by those who teach that life appeared spontaneously and assert that the Bible's account of creation is a myth.

Having deliberately conflated abiogenesis with Evolution, the brochure continues with its False Dilemma. It should have discussed abiogenesis and Evolution separately, but the author is obviously too willfully ignorant and steeped in Watch Tower tradition to understand the difference.

The brochure states its focus:

We will focus on the cell because that is the most basic unit of life. You will be able to review some amazing facts about how cells are built.

All well and good, but all of this amounts to the *Argument from Personal Incredulity* (see p. 83).

You will also be asked to analyze the assumptions that underpin the theory of evolution.

We will see that this claim is false, because the “assumptions” are actually caricatures of those of the actual Theory of Evolution.

³⁷¹ https://en.wikipedia.org/wiki/False_dilemma

Question 1: How Did Life Begin?

The argumentation begins with an *ad hominem* statement (p. 4):

Just as many parents feel awkward about discussing where babies come from, some scientists seem reluctant to discuss an even more fundamental question—Where did life come from?

Scientists are *not* reluctant to discuss abiogenesis. Rather, those who know something about the various hypotheses and speculations advanced by some scientists know that there simply is not much to be said. This is much like the situation with the so-called Big Bang idea—what happened *after* the Big Bang is well described by Einstein’s General Theory of Relativity and Quantum Mechanics, but what happened during and before—if those terms even make sense—is scientifically unknown. As with abiogenesis there are speculations and hypotheses but no *scientific theories*.

These sorts of ignorant *ad hominem*s are characteristic of Watch Tower writings on evolution.

Continuing deliberately to confuse Evolution with abiogenesis, the brochure continues:

What do many scientists claim? Many who believe in evolution would tell you that billions of years ago, life began on the edge of an ancient tidal pool or deep in the ocean. They feel that in some such location, chemicals spontaneously assembled into bubblelike structures, formed complex molecules, and began replicating. They believe that all life on earth originated by accident from one or more of these “simple” original cells.

Once again, *some* scientists certainly accept some form of abiogenesis, some (most theistic evolutionists) reject it, and some reserve judgment.

The brochure continues with another false dilemma:

Other equally respected scientists who also support evolution disagree. They speculate that the first cells or at least their major components arrived on earth from outer space.

This is a false dilemma because the notion that “major components arrived from outer space” is not only uncommon, but is merely one of the many speculations advanced by scientists and others from time to time. And in almost all cases these speculations are clearly labeled as such, and often the people who advance them clearly label them “far from mainstream”.

Why? Because, despite their best efforts, scientists have been unable to prove that life can spring from nonliving molecules.

Nothing new here. This is well known to all who know anything about abiogenesis. This is partly because in science there is no such thing as *proof*. Rather, *weight of evidence* determines what is generally accepted in the science community. It is partly because hypotheses about abiogenesis are so new that they cannot be called established science.

The brochure goes on deliberately to misrepresent a scientist as having supported the false claim that, because science has so far been unable to demonstrate abiogenesis in a lab environment, abiogenesis is impossible. The false claim is also made based on the false claim made in other Watch Tower publications that the experiments made by 19th-century scientists such as Louis Pasteur and others proved that spontaneous generation is impossible. Those experiments proved that spontaneous generation is extremely *uncommon*, as opposed to the earlier belief, largely due to Aristotle and supported by “folk science”, that life *commonly* arose from inanimate matter. They proved that, in the many experiments, life *did* not arise spontaneously, not that under any and all conditions it *can* not arise. And of course, no proper modern scientists claim that whatever life might have arisen from inanimate matter did so in anything like modern forms such as bacteria with all their full-blown cellular machinery, but in a rudimentary form that is completely unknown.

In 2008, Professor of Biology Alexandre Meinesz highlighted the dilemma. He stated that over the last 50 years, “no empirical evidence supports the hypotheses of the spontaneous appearance of life on Earth from nothing but a molecular soup, and no significant advance in scientific knowledge leads in this direction.”

What Meinesz actually said, in context, was this:³⁷²

The balance sheet of the last 50 years of research on the origin of life is simple. No empirical evidence supports the hypotheses of the spontaneous appearance of life on Earth from nothing but a molecular soup, and no significant advance in scientific knowledge leads in this direction. Even if our alchemists one day reconstruct in their laboratories part of the puzzle of how bacterial machinery arose, it will be difficult, if not impossible, to prove that that is how things actually happened on Earth.

Clearly then, Meinesz’s objection is not about possibility of abiogenesis, but about the impossibility of proving *exactly how* it happened *on earth*. This comment is introduced a chapter dedicated to panspermia, so Meinesz does not even object to abiogenesis in and of itself, since panspermia requires it to have happened *somewhere*—just not on earth.

If the spontaneous generation of life is so hard to believe, what can be said of the notion of a Supreme Creator God? Did that God have an origin? If so, how much more unlikely would that be than a spontaneous origin of lowly chemical life? What of the notion that such a God has always existed? Can it be proved? Is there even scientific evidence for it? Clearly, those who believe in such a God but reject abiogenesis are logically inconsistent and apply double standards to their beliefs. The brochure carefully avoids such questions.

The brochure continues with *Arguments from Personal Incredulity*, which I will skip.

Question 4: Has All Life Descended From a Common Ancestor?

This section again blurs the distinction between abiogenesis and Evolution, flipping back and forth between arguments against the one and then the other and conflating them all the way. The author is so ignorant or dishonest that he refuses to recognize the distinction. Note in the first paragraph (p. 22) how the origin of life is conflated with its subsequent evolution:

Many [scientists] give the impression that the fossil record supports the theory of a common origin for life. They also claim that because all living things use similar “computer language,” or DNA, that all life must have evolved from a common ancestor.

That’s a gross distortion of the scientific consensus. There are *many* reasons that scientists accept a common ancestor. Hardly any, if any at all, seriously consider that life had more than one origin; hence all subsequent life had that original form as a common ancestor. The brochure’s author seems incapable of clear reasoning.

The brochure next considers the Genesis account and reiterates Watch Tower tradition. But it completely ignores the fact that Genesis, for the most part, is completely at odds with the fossil record (see p. 145 of this paper for an extended discussion). For example, a crucial point that the Watch Tower narrative ignores is that Genesis is clear that **all** flying creatures—insects, pterosaurs, birds, bats, flying fish—were created on the **fifth** creative day, **before any land creatures of any sort** were created on the **sixth** day. But according to the fossil record, land-dwelling amphibians, dinosaurs, early mammals and all manner of other land creatures appeared tens to hundreds of millions of years before any birds or bats. The paragraph concludes with:

The Bible account of creation also leads us to expect that new types of creatures would appear in the fossil record suddenly and fully formed.

³⁷² Alexandre Meinesz, *How Life Began: Evolution’s Three Geneses*, p. 45.

But in view of the fact that Genesis has most of the order of appearance of life forms at odds with the fossil record, no one should have confidence that conclusions like the above are more than wishful thinking. And of course, many theistic evolutionists disagree with this conclusion. The conclusion also ignorantly oversimplifies the manner of appearance of life in the fossil record. Some forms, as discussed in the above material on the 2006 *Awake!*, appear gradually and are preceded by a long and gradual succession of forms barely distinguishable from one another. Others appear suddenly, but these are usually after an extinction of earlier forms, again as I've discussed before.

Darwin's Tree Chopped Down?

The brochure next tries to argue that Darwin's idea of a "tree of life" was wrong:

In recent years, scientists have been able to compare the genetic codes of dozens of different single-celled organisms as well as those of plants and animals. They assumed that such comparisons would confirm the branching "tree of life" proposed by Darwin. However, this has not been the case.

What has the research uncovered? In 1999 biologist Malcolm S. Gordon wrote: "Life appears to have had many origins. The base of the universal tree of life appears not to have been a single root." Is there evidence that all the major branches of life are connected to a single trunk, as Darwin believed? Gordon continues: "The traditional version of the theory of common descent apparently does not apply to kingdoms as presently recognized. It probably does not apply to many, if not all, phyla, and possibly also not to many classes within the phyla."

The quotation from Gordon was borrowed lock, stock and barrel from the Moonie and Intelligent Design proponent Jonathan Wells.³⁷³ The full text of Gordon's article is online.³⁷⁴ The material below shows that the Watch Tower brochure has again misrepresented the authors it quotes.

In 2012 a poster called "Scott77" posted an extensive criticism of the brochure, listing many misquotations and criticisms of its false arguments.³⁷⁵ The following is borrowed from that post.

The Watchtower recycles the exact same quote taken out of context in the book *Icons of evolution: science or myth?: why much of what we teach about evolution is wrong*, page 57, by Jonathan Wells & Jody F. Sjogren, who are advocates of Intelligent Design.

Dr. Gordon is correct when explaining that the tree of life (phylogeny) may have various "roots" and not a single starting point. Ancient single celled organisms swapped genetic information through a process called horizontal gene transfer. Evolved features and mechanisms could be traded back and forth leading to radically new types of life. This chaotic environment is not amenable to a simple tree. Instead, a modified tree would feature branches splitting off, curling and recombining in strange ways. This phenomenon was unknown to Darwin, so his simpler conception of phylogeny needs refinement. This is to be expected, being that he lived 150 years ago. Modern biology owes its foundations to Darwin, but in a way, evolution is not really "Darwin's theory" anymore. His key insights remain, but they have been radically improved and supplemented. Science is not a dogmatic collection of immutable statements made by unassailable saints. It does not matter that Darwin was incorrect about many things, as science is not tied to any individual.

Dr. Gordon's other comments should be placed in context by noting that the title of the published work in which his statements appear is *The Concept of Monophyly: A Speculative Essay*. This publication is a speculative work addressing emerging concepts in the complicated world of biological classification called cladistics. Comments involving the reality of categories like kingdom or phylum are intimately related to inquiries into the ancient history of single-celled organisms. This work does not challenge the fact that modern species are related by common ancestors.

³⁷³ Jonathan Wells, *Icons of Evolution*, p. 53.

³⁷⁴ <http://www.arn.org/docs/odesign/od201/ls201.htm>

³⁷⁵ <https://www.jehovahs-witness.com/topic/225916/23-scientists-misquoted-ever-deceitful-watchtower-society>

Source: Biology and Philosophy. “The Concept of Monophyly; A Speculative Essay,” by Malcolm S. Gordon. 1999, p. 335 Answer by the Professeur Gordon

(...) The quotations you cite may not be exactly verbatim, but they are close enough. They are, however, quoted out of context. Whoever wrote the tract is likely not a scientist and may not have a clear understanding of scientific method or principles. The creationist and ID views of evolution are religious and theological, not scientific. I do not agree with them. (...) Yours, Malcolm Gordon- *Email 08/27/2010*

Having quoted Malcolm Gordon out of context and drawn a false conclusion, the brochure’s author compounds his dishonesty:

Recent research continues to contradict Darwin’s theory of common descent. For example, in 2009 an article in *New Scientist* magazine quoted evolutionary scientist Eric Bapteste as saying: “We have no evidence at all that the tree of life is a reality.” The same article quotes evolutionary biologist Michael Rose as saying: “The tree of life is being politely buried, we all know that. What’s less accepted is that our whole fundamental view of biology needs to change.”

“Scott77” comments further:

Rather than explaining what the connection is between these quotes and common descent or, more importantly, how these quotes relate back to the central claim of the whole article itself, which is that there are “fixed barriers separating the different kinds” (p.22), the article goes directly into the next subheading, leaving the reader to make the connection on his or her own, in all likelihood presuming that these quoted scientists (Bapteste and Rose) are disputing common descent *in toto*. However, a review of the *New Scientist* article from which these quotes are taken quickly reveals that **they are speaking of gene swapping among unicellular organisms—bacteria and viruses**. “As early as 1993, some were proposing that for bacteria and archaea, the tree of life was more like a web,” the original *New Scientist* article states. “By sheer weight of numbers almost all the living things on Earth are microbes. It would be perverse to claim that the evolution of life on Earth resembles a tree *just because multicellular life evolved that way*.” (emphasis added).

Source: *New Scientist*. “Uprooting Darwin’s Tree.” by Graham Lawton, January 24, 2009, p. 34.37.39

So the three quoted scientists—Gordon, Bapteste and Rose—have been quoted out of context and made to say something they did not. These scientists were speaking about the recent realization among scientists that **unicellular organisms—bacteria and viruses**—sometimes experienced “horizontal gene transfer”, which seems to have scrambled lines of descent.³⁷⁶ Multicellular organisms do not experience this, but the brochure’s grossly dishonest quoting practice makes it appear that the quoted scientists were stating that there is no “tree of life” for multicellular organisms at all and therefore that Darwin was wrong.

So Darwin’s “tree of life” has in no sense been “chopped down”, but modified into a branching bush for the earliest microbial life forms. As usual the Watch Tower writers have lied about source references to reach their false conclusions.

What About the Fossil Record?

This section begins with an overly simplified description of macroevolution:

Many scientists point to the fossil record as support for the idea that life emerged from a common origin. They argue, for example, that the fossil record documents the notion that fish became amphibians and reptiles became mammals. What, though, does the fossil evidence really show?

Oversimplification and general inaccuracy is evident in the first sentence: the fossil record is *not* used to support the idea that life *emerged* from a common origin, because there are no fossils

³⁷⁶ https://en.wikipedia.org/wiki/Horizontal_gene_transfer

whatsoever having to do with the origin of life. There are trace fossils of microbes from about 3.5+ billion years ago, but nothing about their origin. There are fossil stromatolites from 3-3.5 billion years ago but there is no information about the microbes that built them.

Rather than the brochure's misrepresentation about life's *emergence*, the fossil record is used to support the notion of *common descent*, and that general evolution—change in gene frequencies and the makeup of populations of plants and animals over time—has occurred *after* the origin of life and through at least 3.5 billion years of the earth's history. Once again the author has wrongly conflated abiogenesis and the Theory of Evolution.

The statements “fish became amphibians” and “reptiles became mammals” are gross oversimplifications of paleontological findings, as well as an invocation of obsolete notions of descent. See the material beginning on page 59, and on pages 69 and 176 for details.

Next the brochure incoherently flips from talking about documenting these general changes to arguing that the fossil record shows abrupt, jerky changes rather than gradual evolution. But there is no logical connection between the notions of macroevolution and common descent, and the notion that gradual evolution does not occur because the fossil record shows jerky change.

To support its argument that jerkiness in the fossil records means no evolution, the brochure continues with an out-of-context quotation so often used by creationists that it has become a cliché in creationist-critical writing:

“Instead of finding the gradual unfolding of life,” says evolutionary paleontologist David M. Raup, “what geologists of Darwin's time, and geologists of the present day actually find is a highly uneven or jerky record; that is, species appear in the sequence very suddenly, show little or no change during their existence in the record, then abruptly go out of the record.”

This is the notion of Punctuated Equilibrium, briefly discussed above. The modern view is that most of the time—but not all of the time—evolution occurs in a jerky fashion when environments remain stable for a long time and then abruptly change, causing extinctions and opening up space for “adaptive radiations”,³⁷⁷ i.e., where the surviving life forms experience little competition and evolution proceeds rapidly. These radiations are documented in the fossil record. The brochure's author is not competent to discuss these matters.

The Watch Tower Society has misrepresented Raup before. In the discussion below I consider material from its 1985 book *Life-How Did It Get Here? By Evolution or by Creation?* The reader can obtain Raup's 1979 article online³⁷⁸ to help follow the discussion.

Many criticisms have been published online about the way creationists have often misrepresented what Raup said.³⁷⁹ Beginning in 1991 I wrote an extensive critique of the Society's *Creation* book, which contained a discussion of how the Society had grossly misrepresented Raup's views.³⁸⁰ Below is a version of that, modified to fit with the above discussion. Note that this discussion completely refutes the claim made by the *Origin of Life* brochure.

³⁷⁷ https://en.wikipedia.org/wiki/Adaptive_radiation

³⁷⁸ David M. Raup, “Conflicts Between Darwin and Paleontology,” *Field Museum of Natural History Bulletin*, January 1979, pp. 22-25: https://archive.org/details/cbarchive_121465_conflictsbetweendarwinandpaleo1930/page/n9

³⁷⁹ http://commondescent.net/articles/Raup_quote.htm “On a Common Creationist Quotation of Dr. David M. Raup” <http://www.talkorigins.org/faqs/quotes/mine/part1-2.html#quote25> The Quote Mine Project Or, Lies, Damned Lies and Quote Mines - “Sudden Appearance and Stasis” by the talk.origins newsgroup

³⁸⁰ <https://www.critiquesonthewatchtower.org/old-articles/2006/02/part-1-disagreements-about-evolution.html>

Excerpt From My Critique of the 1985 *Creation* Book

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The above material indicates that, while scientists disagree on the mechanisms of evolution, they agree that evolution, in a general sense, did indeed occur. The mechanism of natural selection is not the same thing as evolution. However, *Creation* is determined that its readers not know the difference. Paragraphs 14 and 15 quote David M. Raup, curator of geology at the Chicago Field Museum, writing in its *Bulletin*:

Millions of bones and other evidence of past life have been unearthed by scientists, and these are called fossils. If evolution were a fact, surely in all of this there should be ample evidence of one kind of living thing evolving into another kind. But the *Bulletin* of Chicago's Field Museum of Natural History commented: "Darwin's theory of [evolution] has always been closely linked to evidence from fossils, and probably most people assume that fossils provide a very important part of the general argument that is made in favor of darwinian interpretations of the history of life. Unfortunately, this is not strictly true."

This is a blatant and deliberate misrepresentation of what Raup said. Note that the word "[evolution]" was inserted into the quotation. The original words here were: "Darwin's theory of *natural selection* has always been closely linked to evidence from fossils..." *Creation* is clearly making it appear as if Raup's statements concerning the mechanism of natural selection actually apply to evolution in the general sense. Immediately after the above quoted statement, Raup's article said:³⁸¹

We must distinguish between the *fact* of evolution—defined as change in organisms over time—and the *explanation* of this change. Darwin's contribution, through his theory of natural selection, was to suggest *how* the evolutionary change took place. The evidence we find in the geologic record is not nearly as compatible with darwinian natural selection as we would like it to be. Darwin was completely aware of this. He was embarrassed by the fossil record because it didn't look the way he predicted it would and, as a result, he devoted a long section of his *Origin of Species* to an attempt to explain and rationalize the differences. There were several problems, but the principle one was that the geologic record did not then and still does not yield a finely graduated chain of slow and progressive evolution. In other words, there are not enough intermediates.

Paragraph 15 quoted part of this, but only enough to give the impression that there are *no* intermediates. But Raup went on to say:

There are very few cases where one can find a gradual transition from one species to another and very few cases where one can look at a part of the fossil record and actually see that organisms were improving in the sense of becoming better adapted.

Notice that Raup did not say there are *no* cases, but that there are *very few* cases. We will cover this material more extensively later. For now, Raup's further statements are sufficient:³⁸²

Instead of finding the gradual unfolding of life, what geologists of Darwin's time, and geologists of the present day actually find is a highly uneven or jerky record; that is, species appear in the sequence very suddenly, show little or no change during their existence in the record, then abruptly go out of the record...

What Raup means here is, again, that, while there are *very few* examples of gradual change, there are still *some*. That is very different from *Creation's* implication. Some examples will be given later in this paper.

Well, we are now about 120 years after Darwin and the knowledge of the fossil record has been greatly expanded. We now have a quarter of a million fossil species but the situation hasn't changed much. The record of evolution is still surprisingly jerky and, ironically, we have even fewer examples of evolutionary transition than we had in Darwin's time. By this I mean that some of the classic cases of darwinian change in the fossil record, such as the evolution of the horse in North America, have had to be discarded or modified as a result of more detailed information—what appeared to be a nice simple progression when relatively few data were

³⁸¹ Raup, "Conflicts Between Darwin and Paleontology", 1979, pp. 22-23.

³⁸² Raup 1979, pp. 23, 25.

available now appears to be much more complex and much less gradualistic. So Darwin's problem has not been alleviated in the last 120 years and we still have a record which *does* show change but one that can hardly be looked upon as the most reasonable consequence of natural selection. Also the major extinctions such as those of the dinosaurs and trilobites are still very puzzling.

Comparing Raup's statements against *Creation's* partial citation of them in the latter half of paragraph 15 shows further distortion of what Raup said.

A letter was written by another critic to David Raup to get his opinion of the way *Creation* quoted him. Here is his response:

Thanks for sending the xeroxes from the Watchtower tract highlighting the quotes from my 1979 article in the Field Museum Bulletin.

The Watchtower treatment sounds rather impressive—but only if you don't see the trick. The critical element is the assertion on page 19, which says:

“If evolution were a fact, surely in all of this there should be ample evidence of one kind of living thing evolving into another kind.”

If one accepts this statement as true, then the small number of transitional forms in the fossil record is surely a problem and Watchtower's line of argument is valid. But the statement quoted above is patently false and Watchtower's logic falls. Watchtower's argument is based on the false assumption that evolution moves slowly enough for the transitional forms to be seen in a highly fragmented geological record. It is perfectly possible (and probable) that the evolution of new species occurs too rapidly to be seen in the rock record, a record in which depositional rates are too low to record changes that occur in a short time. As an analogy, it would be impossible to observe the progress of a football game if we only had photographs taken 30 minutes apart.

To put the foregoing in a broader context, it is important to note that the creationists are devoted to their “two-model approach.” They assert that there are only two alternatives to understanding the history of life: (1) the Biblical story and (2) Darwin's formulation in the middle of the 19th century. And Darwin did, of course, predict that we should find lots of transitional fossils. We have not found them and the creationists conclude that the Biblical alternative must, therefore, be the correct one. The tragedy of this is that it ignores all the other ideas about the problem that have been proposed and tested since Darwin's time. There are obviously more than two “models” available.

In a yet broader context, my statement at the end of page 22 of the Field Museum article is important. **I noted the importance of distinguishing the “fact” of evolution from the “explanation” of evolution. There is lots of evidence, completely apart from the fossil record, that animals have changed over time. Darwin was only trying to explain how the changes took place. Darwin could be completely wrong but this would not challenge the “fact” of evolution.** As Gould once wrote, “... physicists argue about gravity but apples continue to fall ...” **In other words, we can accept that something happens even though we may not be sure how it happens.**

With all the foregoing information in hand, it should be easy to see how the quotations in paragraph 15 of page 20 lead to a reader's getting a very wrong impression. This is one of the few places where *Creation* honestly mentions that the quotations are dealing with the “failure of the fossil evidence to support *gradual* evolution.” Most references are made to appear to say that the fossil record does not support evolution at all, even though they are really talking about *gradual* evolution versus the rapid, jerky evolution posited by a theory such as punctuated equilibrium. But most readers are not sophisticated enough to know whether *Creation* is talking about a theory that postulates gradual change versus one that postulates jerky change, or is simply adding the descriptive term “gradual” to the term “evolution.” Most readers will assume that the scientists quoted are saying that there is no evidence for what they claim to be the “fact” of evolution. This false impression is exactly what *Creation's* author wants to give.

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Continuing with the *Origin of Life* brochure:

In reality, the vast majority of fossils show stability among types of creatures over extensive amounts of time.

Quite so. But note that it is the “vast majority” that show stability. There are plenty of fossil sequences that show gradual evolution of forms over long periods of time, as documented in countless papers and books on Evolution.³⁸³

The evidence does not show them evolving from one type into another.

Much like observing the growth of a child on a daily basis shows no observable growth.

But the real point is that there are hundreds of fossil sequences that, when lined up according to age, show a very clear pattern of change—from gradual to jerky. Watch Tower writers are loathe to discuss these changes. Again see page 79 for examples.

Unique body plans appear suddenly. New features appear suddenly.

One of the basic tenets of punctuated equilibrium is that evolutionary change generally occurs in small, isolated populations, which when some major environmental change or general extinction occurs, migrate out into the new environment. Because the founder population is small, it is unlikely to be fossilized. But if it expands into the new, larger environment, fossilization proceeds at a normal rate.

For example, bats with sonar and echolocation systems appear with no obvious link to a more primitive ancestor.

No longer true. A report from 2008 about a 2003 discovery of a 53 million year old bat indicates that early bats flew but did not use echolocation.³⁸⁴ Echolocation appeared later. Most bats are quite small and do not fossilize well, which is especially true of ear bones and other structures involved in echolocation. Nevertheless, scientists are steadily making progress in deciphering the steps by which echolocation appeared.³⁸⁵

The brochure continues chaotically jumping around:

In fact, more than half of all the major divisions of animal life seem to have appeared in a relatively short period of time. Because many new and distinct life forms appear so suddenly in the fossil record, paleontologists refer to this period as “the Cambrian explosion.” When was the Cambrian period?

The previous few statements were talking about supposed evolutionary change in general, but the brochure here jumps to evolution in the Cambrian Period. The argumentation is so jumbled that readers will have trouble following it.

Nevertheless, the Cambrian Period (see p. 64) lasted from 541 to 485 million years ago and the ‘explosion’ took up 13-30 million years of that, depending on the source references. I’ll use 20 million as an average.

Let us assume that the estimates of researchers are accurate.

In the usual way of Watch Tower writers, this one avoids giving any dates for the Cambrian Period. Why? Because now it is apparently Watch Tower policy never to mention such dates. Why? Because doing so would cause alarm to the millions of older Jehovah’s Witnesses who were clearly told, through the 1980s, that life was no more than 34,000 years old. Watch Tower leaders do not want to

³⁸³ cf. Donald Prothero, *Evolution: What the Fossils Say and Why It Matters*.

³⁸⁴ <https://www.theguardian.com/science/2008/feb/13/bat.evolution>

³⁸⁵ <https://www.sciencemag.org/news/2013/09/bats-and-dolphins-evolved-echolocation-same-way>
https://wiki.ubc.ca/Evolution_of_Echolocation_in_Bats

open that can of worms. The brochure continues (numbers refer to points in a graphic at the bottom of pages 22-23):

In that case, the history of the earth could be represented by a time line that stretches the length of a soccer field (1). At that scale, you would have to walk about seven eighths of the way down the field before you would come to what paleontologists call the Cambrian period (2). During a small segment of that period, the major divisions of animal life show up in the fossil record. How suddenly do they appear? As you walk down the soccer field, all those different creatures pop up in the space of less than one step!

Soccer fields average about 350 feet long, the age of the earth is about 4.56 billion years, and the ‘explosion’ was about 20 million years long, which would represent about 1.5 feet on the soccer field—about one step long, so the author’s arithmetic is correct.

But the argument is a *non sequitur* and ridiculous on its face—20 million years is 20 million years. And that is a *long* time for life forms to evolve in. Perhaps surprisingly short in terms of the entire geological time scale, but still a very long time.

The relatively sudden appearance of these diverse life forms is causing some evolutionary researchers to question the traditional version of Darwin’s theory.

This is another instance where the author demonstrates little knowledge of the Theory of Evolution that he is criticizing. The traditional version of Darwin’s theory of evolution by natural selection was long ago superseded by newer versions. These versions undergo constant change as new fossils are found, as genetics becomes more fleshed out, and as interpretations of the basic data change. “The traditional version of Darwin’s theory”—evolution purely by natural selection—is another *non sequitur*.

Although “the traditional version of Darwin’s theory” means “natural selection”, biologists since Darwin’s time have identified additional evolutionary mechanisms, which have been incorporated into the Theory of Evolution: mutation, non-random mating, migration (gene flow), and genetic drift.³⁸⁶ Claiming that scientists’ questioning of “the traditional version” amounts to an argument against macroevolution is like trying to refute modern physics by complaining that modern scientists question Isaac Newton’s ideas on physics, while ignoring the 350 years of progress since he published *The Principia*, which progress includes Einstein’s General Relativity and Quantum Mechanics. The brochure continues:

For example, in an interview in 2008, evolutionary biologist Stuart Newman discussed the need for a new theory of evolution that could explain the sudden appearance of novel forms of life. He said: “The Darwinian mechanism that’s used to explain all evolutionary change will be relegated, I believe, to being just one of several mechanisms—maybe not even the most important when it comes to understanding macroevolution, the evolution of major transitions in body type.”

Newman’s interview was rather bizarre, as can be seen by just reading it.³⁸⁷ And Newman was quite behind the times, since natural selection had long been “relegated to being just one of several mechanisms” for understanding macroevolution. For example, in the 1920s and 1930s Ronald Fisher, Sewall Wright and J.B.S. Haldane developed “population genetics”, which used the idea of genetic drift to supplement natural selection.³⁸⁸

Furthermore, the fact that natural selection is just one of several mechanisms of evolution says nothing about what Gould and Raup and many others have called “the **fact** of evolution”. It only has to do with *how* evolution occurred, not *that* it occurred. The ‘how’ could be ‘by divine fiat’ or by space

³⁸⁶ https://evolution.berkeley.edu/evolibrary/article/evo_14

³⁸⁷ <https://archive.archaeology.org/online/interviews/newman.html>

³⁸⁸ https://en.wikipedia.org/wiki/Genetic_drift

aliens or by various natural mechanisms, but the *fact* of evolution remains a fact. Why? Because it is clearly observed in the fossil record. The Watch Tower writer completely misses this.

Newman's views are downright weird. Note this comment from biologist Jerry Coyne about Newman's article in *The Huffington Post*:³⁸⁹

In his new column in the Science section, "Where do complex organisms come from?", Newman's answer is this: "Not from natural selection, but from the self-organizing properties of molecules and tissues." This is a popular answer among contrarians, creationists, and those who know little about evolution, but it's wrong. It's wrong because "self-organization" cannot explain adaptations: those features of organisms which have obviously appeared to aid their survival and reproduction.

This notion of "self-organizing properties of molecules and tissues" has no empirical support. Newman's ideas are basic to various forms of creationism, including most forms of theistic evolution. The reader should consult the *Huffington Post* reference.

Furthermore, Newman's statement appeared in an article by the self-styled journalist Suzan Mazur. Mazur has made it a goal in life to bring down evolutionary theory, and she has done it by eliciting comments from various proper scientists that she then twists into making them appear to say something rather different from what they actually did say. She also uses comments from scientists who hold strange ideas much at odds with those of mainstream science.³⁹⁰ In 2010 Mazur published a book about a small scientific conference in Austria that was roundly dismissed by mainstream scientists with comments like this:³⁹¹

The book was inaccurate, muddled and an uninformed account of the real Altenberg meeting.

And this:³⁹²

I am feeling a growing sense of incredulity as I read the latest babble from Susan Mazur. She was the one who reported on this upcoming meeting at Altenberg with an excess of hyperbole and a truly misleading inflation of the importance of that event. It sounds interesting in that a small group of respectable, credible scientists are gathering (along with a few who would most charitably be called crackpots), but it's not that unusual—meetings happen all the time, the people participating in this event go to meetings all the time, and it's simply different but routine.

I get the impression that Mazur is a journalist with no sense of proportion and a rather distressing lack of skepticism. This meeting will not revolutionize science. If we're lucky, a few good ideas will emerge from it. More likely, some people will have a good time, they'll learn a few things, and they'll fly back to work and we won't hear about it ever again.

Clearly then, the brochure's quotation of Stuart Newman is at best of no value to the author's argument, and at worst an endorsement of downright bizarre and wrong views that are entirely at odds with Watch Tower teaching.

Problems With the "Proof"?

What, though, of the fossils that are used to show fish changing into amphibians, and reptiles into mammals?

Another question that misrepresents macroevolution. As we saw above, there are plenty of such fossils. The very notions that fish changed into amphibians and reptiles into mammals shows gross misunderstanding of what is in the fossil record and of what scientists say.

³⁸⁹ <https://whyevolutionistrue.wordpress.com/2012/12/07/another-antiselectionist-stuart-newman-surfaces-at-puffho/>

³⁹⁰ <https://whyevolutionistrue.wordpress.com/2015/04/12/mae-wan-ho-and-suzan-mazur-the-blind-leading-the-blind-about-evolution/>

³⁹¹ https://rationalwiki.org/wiki/Altenberg_16_controversy

³⁹² <https://scienceblogs.com/pharyngula/2008/03/26/journalistic-flibbertigibbet>

No evolutionary scientist claims that fish ‘changed’ into amphibians, but that one lineage of fish gave rise to a few new forms that had characteristics intermediate between the ‘parent’ lineage and one or more ‘child’ lineages. ‘Parent’ and ‘child’ are obviously used in the sense of “older form” and “newer form” since that is the time sequence in the fossil record.

The notion of “reptiles into mammals” is an obsolete one at least 30 years out of date. In the 1990s the discipline of cladistics showed that modern reptiles (‘true reptiles’: snakes, lizards, turtles, crocodiles) are very different from most of the animals that were originally classified as reptiles. The term “reptile” is left over from scientific ancient history. See page 69 for details.

The *Origin* brochure’s author should have been aware of this; if he was not he is incompetent; if he was he is dishonest. There were many books on evolution available in 2010 that explained all this, and much more:

Donald Prothero, *Evolution: What the Fossils Say and Why It Matters*, 1st edition, 2007.

Neil Shubin, *Your Inner Fish: A Journey into the 3.5-Billion-Year History of the Human Body*, 2009.

Jerry A. Coyne, *Why Evolution Is True*, 2009.

Richard Dawkins, *The Greatest Show on Earth: The Evidence for Evolution*, 2009.

Richard Dawkins, *The Ancestor’s Tale: A Pilgrimage to the Dawn of Evolution*, 2004.

Any number of technical works on vertebrate paleontology.

Back to the *Origin* brochure.

Do they provide solid proof of evolution in action?

Once again, there is no such thing as *proof* in science; rather there is *weight of evidence*.

Upon closer inspection, several problems become obvious.

First, the comparative size of the creatures placed in the reptile-to-mammal sequence is sometimes misrepresented in textbooks. Rather than being similar in size, some creatures in the series are huge, while others are small.

This is a problem? The author seems to think that his audience of mostly Jehovah’s Witnesses will put two and two together and get five.

The author gives no evidence for his main implication in the text of his article, namely, that certain textbooks display graphics of “the reptile-to-mammal sequence” and that these misrepresent the “comparative size” of the creatures for unspecified, nefarious reasons. Indeed, typical of Watch Tower writers, he *cites* no textbooks at all. Rather, the brochure has a graphic on page 24 (reproduced here) that on the left side shows drawings of Paleozoic ‘reptile’ skulls “as shown in some textbooks”, and on the right side shows “real relative size”.

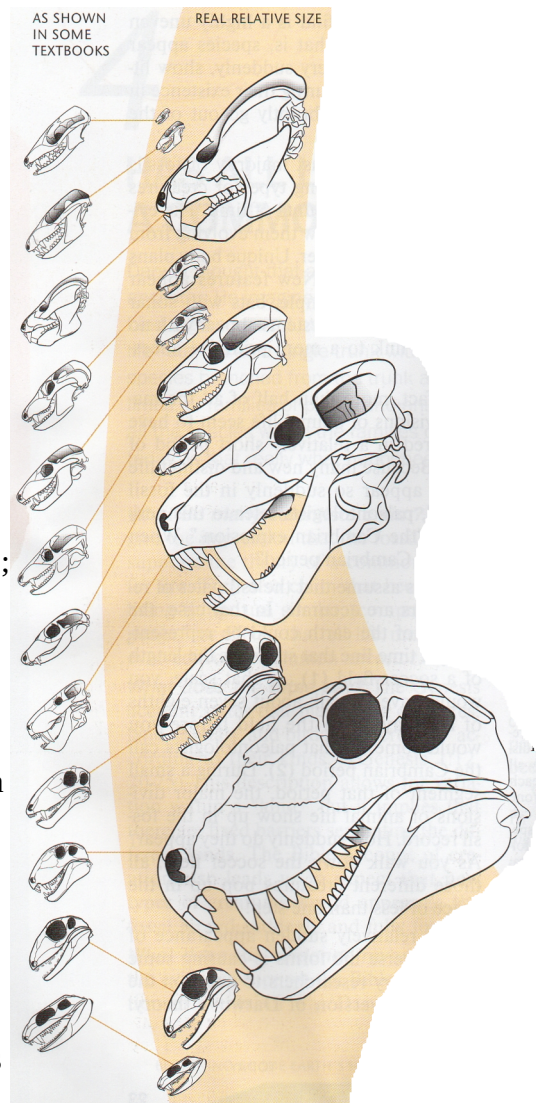
Text for the graphic asks: “Why do some textbooks change the scale of the fossils that they depict as following a proposed sequence?”, as if “change of scale” is somehow dishonest. The dishonesty is on the part of the author: he has presented no evidence that any textbook does what he claims; the drawings of skulls in the *Origin* brochure are not from one textbook but from scattered sources; in general, comparisons among skulls are made to show how features of the skulls (skull morphology) changed over time. These are not claimed by any textbook to be linear sequences of ancestors/descendants, but sequences of fossils that appear in the fossil record.

No source references for these drawings are given, with good reason: a careful look shows that textbooks and articles do not generally line up fossil skulls like this to demonstrate a sequence of ancestor/descendant relationships, but to illustrate that change has occurred over time, and what those changes were. There is a big difference. Since most creatures never leave fossils, paleontologists have concluded that such time sequences represent the ‘bushy’ nature of macroevolution, i.e., if examples of all creatures that once existed could somehow be found, along with positive proof of ancestor/descendant relationships, putting them in a time sequence would result in a picture something like a big bush, with species as the ‘leaves’ and relationships as the twigs and branches.

Furthermore, a literature search shows that the skulls pictured are not drawn from one textbook, but most are from journal articles published by various authors at various times. See the footnotes below for examples.

The question arises: did the brochure’s author fairly represent what he claimed the textbooks show? It turns out that he did not.

For one thing, no textbook or article that the literature search turned up showed a sequence like that depicted in the *Origin* brochure. Rather, graphics showing things like “representative synapsids” or “early synapsids (‘tyrannosaurs’)” turn up, with one or a few of the skulls depicted in the *Origin* brochure.



For another, most of the graphics in the articles and books have notes like “skulls not to scale” clearly written in the text describing the figures. Why did the *Origin* brochure’s author fail to mention this?

Figure 2 below is taken from page 1421 of the article “Simplification As A Trend in Synapsid Cranial Evolution” from the journal *Evolution*.³⁹³ The title alone disproves the *Origin* brochure’s author’s claim. The figure’s text gives its source for the drawings: “Reconstructions modified from those of Hopson (1994) and Rubidium and Sidor (2001).”

The first reference is the article “Synapsid Evolution and the Radiation of Non-Eutherian Mammals” by James A. Hopson, appearing in the conference compendium book *Major Features of Vertebrate Evolution: Short Courses in Paleontology* (Number 7, pp. 190-219, 1994, convened by Donald R. Prothero and Robert M. Schoch; Randall S. Spencer, Series Editor; published by The Paleontological Society, 1994, p. 195). Figure 3 below is from Hopson (1994).

The second reference is to the article “Evolutionary Patterns Among Permo-Triassic Therapsids” in *Annual Review of Ecology and Systematics* (January 2001, 32:449–880, Bruce S. Rubidge and Christian A. Sidor). Figure 2 on page 451 has the same drawing of *Dimetrodon* that appears in the above two references, and has the text “Reconstruction modified from Sidor & Hopson (1998)”, which drawing is not reproduced here.

We can safely conclude that the drawing of *Dimetrodon* in the *Origin* brochure is taken from one of these sources. Obviously the drawing is not from one textbook showing a sequence of synapsid skulls such as is depicted in the *Origin* brochure, but from one or more journal articles on the comparative morphology of synapsid skulls over time, where the figures are clearly labeled “skulls not to scale”.

Clearly then, the *Origin* brochure’s author has gone to some trouble to misrepresent his sources.

Now let’s examine two of the journal article drawings referenced above.

In Figure 2 below, skull A is from the pelycosaur *Dimetrodon*.³⁹⁴ This is apparently one of the possible sources for the *Dimetrodon* drawing from the *Origin* brochure’s graphic on page 24. This is easy to see by visual comparison of the largest drawing in the brochure with skull A in Figure 2. In Figure 3 below skull F is exactly the same. The only difference between these two skulls and the one in the *Origin* brochure is that in the latter, the labels for various regions of the skull are removed.

³⁹³ *Evolution*, 55(7), 2001, pp. 1419–1442.

³⁹⁴ <https://en.wikipedia.org/wiki/Dimetrodon>

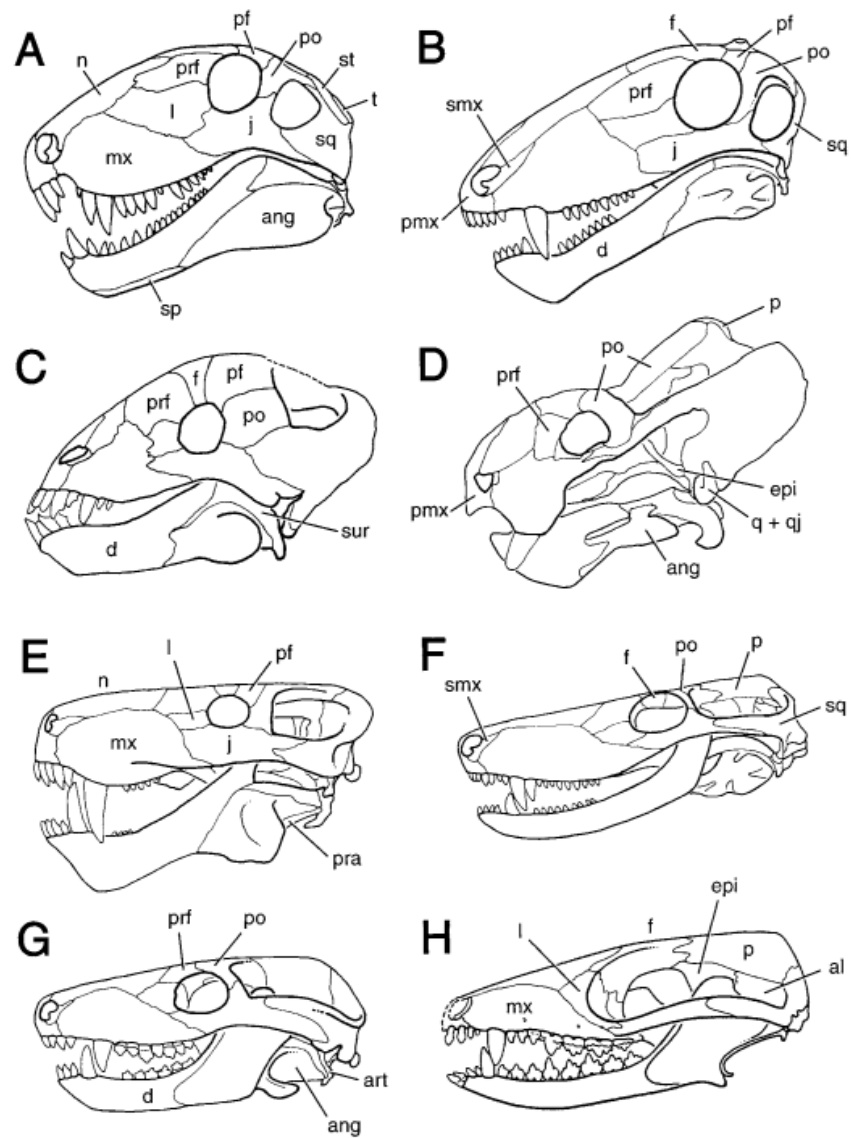


FIG. 2. Skulls of representative synapsids in lateral view: (A) the Early Permian pelycosaur-grade sphenacodontid, *Dimetrodon*; (B) the Late Permian biarmosuchian, *Biarmosuchus*; (C) the Late Permian tapinocephalid dinocephalian, *Tapinocephalus*; (D) the Middle Triassic dicynodont anomodont, *Kannemeyeria*; (E) the Late Permian gorgonopsid, *Leontocephalus*; (F) the Late Permian therocephalian, *Ictidosuchoides*; (G) the Early Triassic basal cynodont, *Thrinaxodon*; (H) the Early Jurassic mammal, *Morganucodon*. Skulls not to scale. Anatomical abbreviations given in Table 1. Reconstructions modified from those of Hopson (1994) and Rubidge and Sidor (2001).

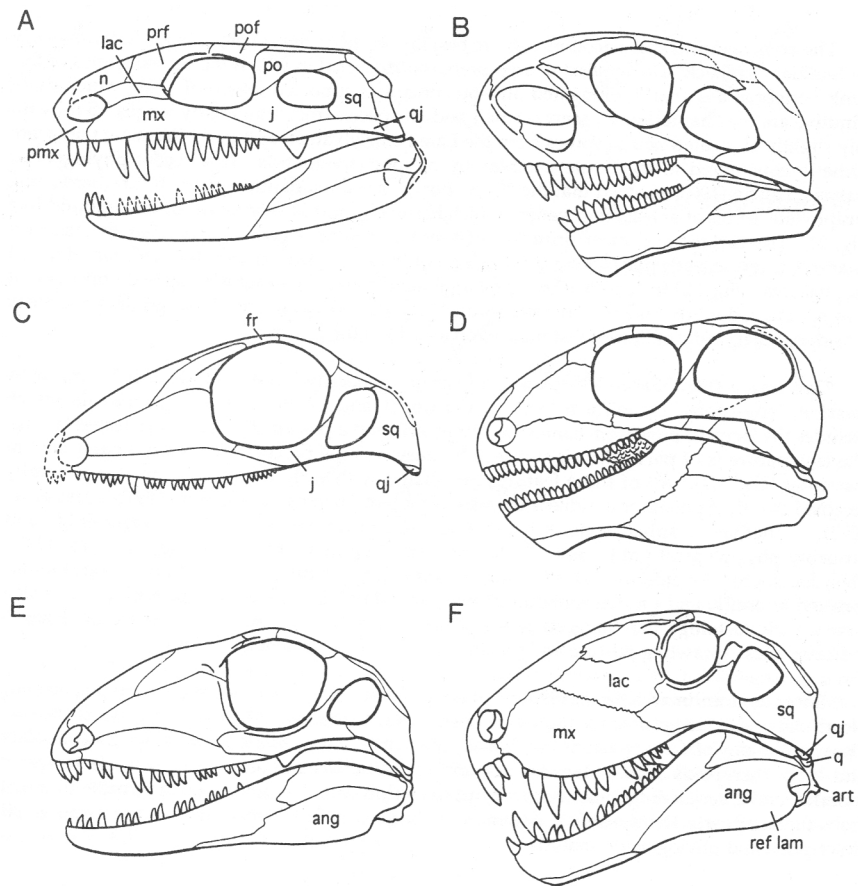


FIGURE 3—Skulls of early synapsids (“pelycosaurs”): A, the eothyridid *Eothyris* (after Reisz, 1986); B, the caseid *Cotylorhynchus* (after Romer and Price, 1940); C, the early edaphosaurid *Ianthasaurus* (after Modesto and Reisz, 1990); D, the edaphosaurid *Edaphosaurus* (after Romer and Price, 1940); E, the “haptodont” *Haptodus* (after Currie, 1979); F, the sphenacodontid *Dimetrodon* (after Romer and Price, 1940). Skulls not to scale. Abbreviations: fr, frontal; j, jugal; lac, lacrimal; mx, maxilla; n, nasal; pmx, premaxilla; po, postorbital; pof, postfrontal; prf, prefrontal; qj, quadratejugal; others as in Fig. 1.

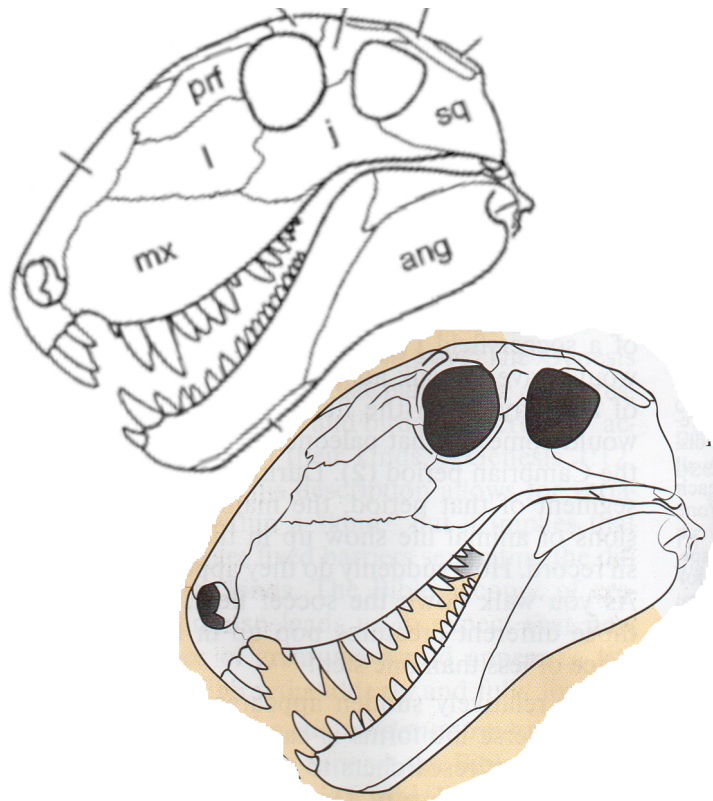
Here is a comparison of the *Dimetrodon* drawings from the *Evolution* journal and the *Origin* brochure, rotated and scaled to the same size.

Note that, aside from labels, the drawings are virtually identical, except that the *Origin* brochure's drawing is essentially a simplified tracing of the original.

Clearly, the brochure borrowed it from the journal *Evolution* or one of the other sources listed above. None of these are textbooks and none show the sequence depicted by the *Origin* brochure.

The other drawings of skulls in the *Origin* brochure are similarly borrowed from scattered sources. Exactly the same drawings can be found in online sources, as shown below. None are depicted in books or articles as part of a linear sequence.

In the list below I'll refer to the *Origin* brochure's drawings as #1 through #12 and the *Evolution* article's drawings as above, A through H.



- #1 ↔ H Morganucodon 205 Ma³⁹⁵
 #2 Pachygenelus 201-174 Ma³⁹⁶
 #3 Kayentatherium wellesi 201-174 Ma³⁹⁷
 #4 Probainognathus 235-221 Ma³⁹⁸
 #5 ↔ G Thrinaxodon 250-245 Ma³⁹⁹
 #6 Procynosuchus 260-251 Ma⁴⁰⁰
 #7 Charassognathus? 260-254 Ma⁴⁰¹
 #8 ↔ E Leontocephalus 259-252 Ma⁴⁰²
 #9 ↔ B Biarmosuchus 267 Ma⁴⁰³
 #10 ↔ A Dimetrodon 295-272 Ma⁴⁰⁴
 #11 Haprodus ~300 Ma⁴⁰⁵
 #12 Datheosaurus? ~300 Ma⁴⁰⁶

³⁹⁵ <https://en.wikipedia.org/wiki/Morganucodon> https://www.google.com/url?sa=i&url=https%3A%2Fhttps://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.researchgate.net%2Ffigure%2FA-series-of-skulls-of-progressively-more-derived-cynodonts-A-D-and-the-early-mammal_fig1_270248264&psig=AOvVaw1OWMMtqdINZcdX8sEJiPd5&ust=1575645883032000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCPjG1LvonuYCFQAAAAAdAAAAABA2

³⁹⁶ <https://en.wikipedia.org/wiki/Pachygenelus> https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.researchgate.net%2Ffigure%2FA-series-of-skulls-of-progressively-more-derived-cynodonts-A-D-and-the-early-mammal_fig1_270248264&psig=AOvVaw1OWMMtqdINZcdX8sEJiPd5&ust=1575645883032000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCPjG1LvonuYCFQAAAAAdAAAAABA2

³⁹⁷ Article “The Postcranial Skeleton of Kayentatherium wellesi from the Lower Jurassic Kayenta Formation of Arizona and the Phylogenetic Significance of Postcranial Features in Tritylodontid Cynodonts”, in *Amniote Paleobiology: Perspectives on the Evolution of Mammals, Birds, and Reptiles*, Edited by Matthew T. Carrano, et al., University of Chicago Press, 2006, pp. 114-152. https://repository.si.edu/bitstream/handle/10088/7533/paleo_SUES_JENKINS.2006.pdf
 Lower Jurassic Period: https://simple.wikipedia.org/wiki/Lower_Jurassic

³⁹⁸ <https://en.wikipedia.org/wiki/Probainognathus> https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.researchgate.net%2Ffigure%2FA-series-of-skulls-of-progressively-more-derived-cynodonts-A-D-and-the-early-mammal_fig1_270248264&psig=AOvVaw1OWMMtqdINZcdX8sEJiPd5&ust=1575645883032000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCPjG1LvonuYCFQAAAAAdAAAAABA2

³⁹⁹ <https://en.wikipedia.org/wiki/Thrinaxodon> https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.researchgate.net%2Ffigure%2FA-series-of-skulls-of-progressively-more-derived-cynodonts-A-D-and-the-early-mammal_fig1_270248264&psig=AOvVaw1OWMMtqdINZcdX8sEJiPd5&ust=1575645883032000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCPjG1LvonuYCFQAAAAAdAAAAABA2

⁴⁰⁰ <https://en.wikipedia.org/wiki/Procynosuchus> https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.researchgate.net%2Ffigure%2FA-series-of-skulls-of-progressively-more-derived-cynodonts-A-D-and-the-early-mammal_fig1_270248264&psig=AOvVaw1OWMMtqdINZcdX8sEJiPd5&ust=1575645883032000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCPjG1LvonuYCFQAAAAAdAAAAABA2

⁴⁰¹ <https://en.wikipedia.org/wiki/Charassognathus>

⁴⁰² <https://www.wikidata.org/wiki/Q2614567>

⁴⁰³ <https://en.wikipedia.org/wiki/Biarmosuchus>

⁴⁰⁴ <https://en.wikipedia.org/wiki/Dimetrodon>

⁴⁰⁵ <https://biologicalmarginalia.tumblr.com/post/85425076941/diagram-of-synapsid-evolution-from-palaeos-which>

⁴⁰⁶ <https://en.wikipedia.org/wiki/Datheosaurus>

The brochure's author is entirely ignorant of these matters. He substitutes a transparently straw-grasping 'argument' for a real one.

To recap, part of the brochure's fake argument is that some unspecified textbooks arrange the fossil skulls shown on page 24 of the brochure into a "proposed sequence" that is wrongly used to show reptiles changing into mammals. The brochure cites no textbooks, nor does it give any information on just which scientists or source references propose this "sequence". The "argument" is a straw man.

Having set up its straw man, the brochure tries to knock it down with a bogus "argument" about the size of the skulls. First, it ignores the fact that any "reptile to mammal" sequences proposed by the overall body of scientific literature are based on the dating of fossils, not on any presupposed evolutionary sequence. Here, the brochure uses the standard creationist falsehood that inverts cause and effect—that presupposed evolutionary sequences determine the dating of fossils. Second, it complains that the sequence of fossil skulls that it itself created on page 24 contains skulls ranging in size from tiny to huge—again ignoring the fact that scientists arrange fossils into time sequences based on dating of the fossils. Third, rather than clearly stating *why* its own proposed sequence of skulls is a problem, it merely *claims* that the range of skull sizes is a problem.

Next, the brochure presents the second part of its straw man knockdown:

A second, more serious challenge is the lack of proof that those creatures are somehow related.

Another straw man. First, no modern scientist worth his salt claims that *proof* of relationships exist. Again, it is *weight of evidence*. Second, the brochure again invokes its own "proposed sequence"—not a sequence proposed by textbooks or scientists—and complains that scientists have not given proof that the skulls in that imaginary sequence are related.

The brochure's author is again demonstrating his abysmal ignorance of the subject he is critiquing. Scientists clearly state that evolution does not proceed in a linear fashion, from one fossil type to another, but in a fashion akin to a tree or a bush, where a species gives rise to two or more "daughter" species, which "branches" then proceed on their merry way through time.⁴⁰⁷ The original single species and the branches may or may not become extinct.

Next, the brochure presents its *coup de grâce*:

Specimens placed in the series are often separated by what researchers estimate to be millions of years.

When that is what rigorous dating methods indicate, of course! Doing otherwise would be rejecting the fossil record!

Once again the author seems to think that scientists put creatures into sequences according to personal whim.

The brochure continues with another quote mine for which no source reference is given:

Regarding the time spans that separate many of these fossils, zoologist Henry Gee says: "The intervals of time that separate the fossils are so huge that we cannot say anything definite about their possible connection through ancestry and descent."

This quotation gives the impression that zoologist Henry Gee was saying that **all** fossils, and in particular, the fossil skulls shown on page 24, are separated by huge spans of time. But he did not; the brochure's author is again misrepresenting his source reference. Here is what Gee actually said, in a narrative about his time hunting hominid (human) fossils in Africa.⁴⁰⁸

⁴⁰⁷ <https://evolution-outreach.biomedcentral.com/articles/10.1007/s12052-008-0035-x>

⁴⁰⁸ Henry Gee, *In Search of Deep Time—Beyond the Fossil Record to a New History of Life*, pp. 22-23.

Before I told everyone else about my own find, straddled on that ridge overlooking an expanse of space and, figuratively, an expanse of time, I wondered fleetingly if it might have been part of a hominid—perhaps half a tooth, like the one Gabriel found. In my mind I was already holding the fragment between finger and thumb, turning it over in the light. The question immediately presented itself: could this fossil have belonged to a creature that was my direct ancestor?

It is possible, of course, that the fossil really did belong to my lineal ancestor. Everybody has an ancestry, after all. Given what the Leakeys and others have found in East Africa, there is good reason to suspect that hominids lived in the Rift before they lived anywhere else in the world, so all modern humans must derive their ancestry, ultimately, from this spot, or somewhere near it. It is therefore reasonable to suppose that we should all be able to trace our ancestries, in a general way, to creatures that lived in the Rift between roughly 5 and 3 million years ago. So much is true, but it is impossible to know, for certain, that the fossil I hold in my hand is my lineal ancestor. Even if it really was my ancestor, I could never know this unless every generation between the fossil and me had preserved some record of its existence and its pedigree. The fossil itself is not accompanied by a helpful label. The truth is that my own particular ancestry—or yours—may never be recovered from the fossil record.

The obstacle to this certain knowledge about lineal ancestry lies in the extreme sparseness of the fossil record. As noted above, if my mystery skull belonged to an extinct giant civet, *Pseudocivetta ingens*, it would be the oldest known record of this species by a million years. This means that no fossils have been found that record the existence of this species for that entire time; and yet the giant civets must have been there all along. Depending on how old giant civets had to be before they could breed (something else we can never establish, because giant civets no longer exist so that we can watch their behaviour), perhaps a hundred thousand generations lived and died between the fossil found by me at site L05 and the next oldest specimen. In addition, we cannot know if the fossil found at L05 was the lineal ancestor of the specimens found at Olduvai Gorge or Koobi Fora. It might have been, but we can never know this for certain. The intervals of time that separate the fossils are so huge that we cannot say anything definite about their possible connection through ancestry and descent.

Clearly then, Gee said that **some** fossils—in particular, those of extinct hominids and giant civets—are separated by huge spans of time. By “huge spans of time” he meant from thousands to a million years. The brochure’s quotation of Gee was another misrepresentative quote mine.

The brochure’s author was well aware that he was misrepresenting Gee, because a footnote for the quotation (p. 24) says:

Henry Gee does not suggest that the theory of evolution is wrong. His comments are made to show the limits of what can be learned from the fossil record.

But the point of the brochure’s section “Problems With the Proof” is to show that the fossils that paleontologists use to show macroevolution in action don’t show ‘evolution’ in action. It is the usual caricature of the Theory of Evolution presented by Watch Tower writers.

The brochure continues with yet another quote mine:⁴⁰⁹

Commenting on the fossils of fish and amphibians, biologist Malcolm S. Gordon states that the fossils found represent only a small, “possibly quite unrepresentative, sample of the biodiversity that existed in these groups at those times.” He further says: “There is no way of knowing to what extent, if at all, those specific organisms were relevant to later developments, or what their relationships might have been to each other.”³⁵

Once again the brochure’s author acknowledges that this is a quote mine, because it does not accurately represent Malcolm Gordon’s views, despite what footnote 35 says:

Malcolm S. Gordon supports the teaching of evolution.

<https://books.google.fr/books?id=TInB03o5uegC&printsec=frontcover&dq=Henry+Gee&ei=T48QTKayFZP2yQS11JmGCw&cd=1&hl=fr#v=onepage&q&f=false>

⁴⁰⁹ Again no source reference is given, but it is from the article “The Concept of Monophyly; A Speculative Essay”, *Biology and Philosophy* 14, Malcolm S. Gordon. 1999, pp. 340-341.

An online article discusses some of the inaccuracies and scholastic sins in the *Origin* brochure.⁴¹⁰ Of the above quote mine of Malcolm Gordon, it says:

The quote can be found on a website for Literature Survey on Origins & Design. Here the full quote in context.

Comparable problems exist with respect to the molecular biological evidence. The living lungfishes and the coelacanth represent tiny, randomly selected remnants of ancient groups that were numerous, varied, and widely distributed in the Devonian. One can only wonder at how accurate, or even relevant, the relationships that we estimate to exist between these organisms today may be with respect to the actual phylogenetic relationships of their basal groups.

The known fossil record of late Devonian basal fishes and tetrapods (emphasis added), while significantly augmented in recent times, remains limited and partial. It is also the case that, while a few forms are now represented by well preserved, near complete remains (notably *Eusthenopteron*, *Panderichthys* and *Acanthostega*), many of the fossils are literally fragments. The animals found represent only a small, stochastically selected, possibly quite unrepresentative, sample of the biodiversity that existed in these groups at those times. There is no way of knowing to what extent, if at all, those specific organisms were relevant to later developments, or what their relationships might have been to each other. They may all have been parts of lineages that died out making no contributions to the overall flow of vertebrate evolution. Using these specific animals as models is a problematic basis for generalizations about how and when tetrapods might have arisen, what they might have been like, where they might have lived, etc,

As you can see, Professor Malcolm S. Gordon is speaking about the late Devonian extinction period, which was one of five major extinction events in the history of the Earth's biota. That's why we don't have a big huge fossil record. So it's not a big surprise and doesn't refute evolution. See the view by the NSCE about this so called dissident view Malcolm Gordon disbelieves universal common ancestry, and another scientist, Michael Behe, accepts it

Source: *Biology and Philosophy*. "The Concept of Monophyly; A Speculative Essay," by Malcolm S. Gordon. 1999, p, 340-341.

Having thoroughly misrepresented source references and presented bogus arguments, the *Origin* brochure makes some conclusions (pp. 25-26):

What Does the "Film" Really Show?

I'll split this into subsections. For more information focusing more on human history, see page 234.

False Reasoning On the "Film" of Life

An article published in *National Geographic* in 2004 likened the fossil record to "a film of evolution from which 999 of every 1,000 frames have been lost on the cutting-room floor." Consider the implications of that illustration.

Imagine that you found 100 frames of a feature film that originally had 100,000 frames. How would you determine the plot of the movie?

I *explained* how, beginning on page 161. But rather than coming to this obvious conclusion, the brochure constructs yet another straw man:

You might have a preconceived idea,

The rest of the brochure's argument would have some value if it were true that scientists "have a preconceived idea". But once again the Watch Tower writer inverts cause and effect: historically,

⁴¹⁰ [http://www.tj-encyclopedie.org/Discussion:L%27Origine de la Vie](http://www.tj-encyclopedie.org/Discussion:L%27Origine%20de%20la%20Vie)

scientists in general have not preconceived evolutionary ideas by magic, but gathered all manner of facts and, only then, come to the conclusion that evolution occurred. That is certainly how Charles Darwin developed his ideas. The world that Darwin lived in was Christian, and nearly all of its inhabitants believed that the God of the Bible created all things. Only after gathering much information about the world did Darwin, after some three decades of study, publish *On the Origin of Species*. Furthermore, the Theory of Evolution, while itself evolving as new information became available, has been thoroughly tested by scientists—and certainly by religious critics. It has survived most tests. Where tests have failed, the Theory has been modified to account for the facts and for the best ideas that scientists can come up with.

The *Origin* brochure continues to run with its straw man:

but what if only 5 of the 100 frames you found could be organized to support your preferred plot, while the other 95 frames tell a very different story? Would it be reasonable to assert that your preconceived idea of the movie was right because of the five frames? Could it be that you placed the five frames in the order you did because it suited your theory? Would it not be more reasonable to allow the other 95 frames to influence your opinion?

Which is precisely what scientists generally have done. The brochure's straw man is that scientists have concocted the Theory of Evolution according to a false "film" scenario—that 95 out of 100 frames falsify evolution and scientists deliberately and dishonestly ignore it.

False Claims About Fossil Lineages

Still on page 25, the *Origin* brochure displays a disembodied blurb that apparently is supposed to reinforce the writer's implication that biologists construct fossil lineages by whim. It is the 2nd quote mine from this author (see page 183):

"To take a line of fossils and claim that they represent a lineage is not a scientific hypothesis that can be tested, but an assertion that carries the same validity as a bedtime story—amusing, perhaps even instructive, but not scientific."—*In Search of Deep Time—Beyond the Fossil Record to a New History of Life*, by Henry Gee, pp. 116-117

Henry Gee is a paleontologist, biologist and nature writer for the scientific journal *Nature*.⁴¹¹ He writes strongly in favor of the biological classification system called cladistics.⁴¹² His above-quoted book is essentially a treatise in favor of cladistics as opposed to earlier methods of classification.

Once again it becomes clear, when the context of the quotation is examined—namely, Henry Gee's entire book—that Gee was not claiming that any scientists at the time of his writing were trying to construct linear ancestor/descendant diagrams—lineages—out of groups of fossils. Rather, he was arguing that the science of most interest to him, cladistics, is the only scientific way of constructing "branching relationships" among sets of fossils that paleontologists suspect *may* be related as ancestors/descendants/cousins.

One of Gee's main points is that, because of the lack of direct observation of such ancestors/descendants, no one can be *certain* of such relations among species, and so the best one can do is construct the statistically most likely branching relationships, say that the species are most likely cousins, and be clear that ancestor/descendant relationships may or may not exist. Gee wrote (p. 113):

No fossil is buried with its birth certificate. That, and the scarcity of fossils, means that it is effectively impossible to link fossils into chains of cause and effect in any valid way, whether we are talking about the extinction of the dinosaurs, or chains of ancestry and descent.

⁴¹¹ https://en.wikipedia.org/wiki/Henry_Gee

⁴¹² <https://en.wikipedia.org/wiki/Cladistics>

Nevertheless, a basic tenet of cladistics is that, despite scientists' inability to be *certain* of ancestor/descendant relationships, such do exist:⁴¹³

The basic idea behind cladistics is that members of a group share a common evolutionary history, and are "closely related," more so to members of the same group than to other organisms. These groups are recognized by sharing unique features which were not present in distant ancestors. These shared derived characteristics are called synapomorphies.

In the 1990s, cladistics became the most common method of biological classification.

Gee concludes his chapter (p. 137):

Evolution has happened: species do transmute into other species, and we must find some way to incorporate that fact into our evolutionary view of the history of life... That answer is cladistics, in which organisms are considered very simply, in terms of testable hypotheses about the place they occupy in the pattern that evolution, by whatever means, and in whatever circumstances, has created. Cladistics does not see organisms as products of ancestry and descent, the results of a process that we cannot evaluate or test, especially when the events concerned are irrecoverably lost in Deep Time and accessible only to our imaginations, which, being human, are biased towards self-glorification. Because it makes no assumptions about ancestry and descent—causes and effects—cladistics is particularly well suited to palaeontology, the study of evolution in Deep Time.

So, far from the *Origin* brochure writer's implication that biologists construct fossil lineages merely by whim, Gee argues that by using the discipline of cladistics, organisms *can* by valid scientific means be placed within the overall pattern of the fossil record.

Gradual Versus Jerky Evolution

Next, the brochure pursues another of the Watch Tower Society's favorite straw men, this time with regard to strictly gradual evolution versus the episodic evolution described by the notion of "punctuated equilibrium". This line of argument, of course, is directly borrowed from creationist literature, both the young-earth kind and the Intelligent Design kind. As usual, only an out-of-context quotation comprises the supporting evidence (pp. 25-26):

How does that illustration [of an incomplete movie film] relate to the way evolutionists view the fossil record? For years, researchers did not acknowledge that the vast majority of fossils—the 95 frames of the movie—showed that species change very little over time. Why the silence about such important evidence? Author Richard Morris says: "Apparently paleontologists had adopted the orthodox idea of gradual evolutionary change and had held onto it, even when they discovered evidence to the contrary. They had been trying to interpret fossil evidence in terms of accepted evolutionary ideas."³⁷

The argument seems to be that, if species change very little over time, they do not change **at all**. This is a deliberate misrepresentation, however, because if species change at all, then they **do** change over time—precisely what evolution is all about. More properly, *populations* change over time, since if a species changes sufficiently that subpopulations within it can no longer reproduce with one another, then by definition those subpopulations are comprised of different species. The writer obviously assumes his readers are too unintelligent to notice.

I will also point out that the writer is either too ignorant, or too contemptuous of his intended audience's intelligence, to notice that his unstated ideas of a sequence of "creation" are thrown into chaos by his arguments. As discussed elsewhere in this paper, Jehovah's Witnesses as an organization claim that their Bible God, in a manner they are never clear about, "created" all life forms. They

⁴¹³ <https://ucmp.berkeley.edu/clad/clad1.html>

vaguely acknowledge that there are sequences in this creation⁴¹⁴ but never discuss sequences of *particular* species, apparently due to an extreme reluctance to discuss specifics of the fossil record. But sequences of species over time mean that *populations* of similar species change over time—which is by *definition evolution*. Whether that evolution is caused by natural selection or other natural means, or by some superintelligent and powerful being (i.e., theistic evolution) is immaterial. The chaos results from the JWs rejecting both naturalistic and theistic evolution.

Modern biologists are well aware that evolution in populations occurs at widely varying rates. While certain trilobite species, once they appeared in the fossil record, remained largely the same for millions of years, other species changed far more rapidly, often in relatively rapid jumps. For example, as discussed on page 158, there are about 800 species of fruit flies in the Hawaiian Islands, all of which descended from one or a handful of common ancestors over some ten million years. Because evolution produces life forms well suited to their environments, absent environmental change there is little pressure for a species to change, and so natural selection acts as a stabilizer.⁴¹⁵

And of course, since the Theory of Evolution, as expounded by fallible humans, is not and never has been an infallible piece of work, at times its proponents have sometimes gotten things wrong—such as putting too much emphasis on the gradual side of evolution rather than viewing it as sometimes gradual and sometimes episodic. But the scientific enterprise over the long haul is strongly self-correcting, since the basic goal of science is not to justify philosophical or religious beliefs, but to find out how the universe really works. Anyone who does not appreciate this fact does not know science or scientists. As rabidly curious humans, scientists tend toward great enthusiasm, even fanaticism, when it comes to finding out how things work. And of course, simple competition for credit often motivates scientists to question what their fellows do.

Footnote 37 of the above quotation from Richard Morris points to his book *The Evolutionists—The Struggle for Darwin’s Soul*, to justify the implication that the human failings of some paleontologists invalidate the entire Theory of Evolution. But that is not at all what Morris said or implied. Quite the contrary. His book is largely about controversies among evolutionary biologists with regard to the precise hows and whys of evolution—not the *fact* of evolution. He made his position clear early in the first chapter:⁴¹⁶

I should point out that none of the participants in this controversy is questioning the idea of evolution... They all agree that the evidence that evolution has taken place is overwhelming ... they all agree that Darwin’s idea that natural selection is the main mechanism of evolutionary change is correct... Darwin’s theory of evolution is universally accepted among biologists... it is possible for scientists to agree on many of the details of the theory while arguing about others. Furthermore, it is possible to agree that natural selection is the main cause of evolution, while debating the details of how evolution happened.

In 1972, biologists/paleontologists Niles Eldredge and Stephen Jay Gould published a paper on what has come to be called *Punctuated Equilibrium*.⁴¹⁷ Morris explained (pp. 106-107):

According to Eldredge’s and Gould’s theory, which is known as the theory of “punctuated equilibrium,” most evolutionary change takes place when new species are created. Small, isolated populations adapt themselves to local conditions, branching off from the parent species as they do. For a short time, natural selection causes them to evolve rapidly. And then nothing much more happens.

⁴¹⁴ cf. “Did Each Creative Day Always Finish What It Started?”, *Awake!*, June 8, 1991, pp. 12-14.

⁴¹⁵ See page 111 for a discussion, and the article “Adaptation” in *Scientific American*, September 1978, p. 213, which states: “The manifest fit between organisms and their environment is a major outcome of evolution.”

⁴¹⁶ Richard Morris, *The Evolutionists: The Struggle for Darwin’s Soul*, pp. 2-3.

⁴¹⁷ https://en.wikipedia.org/wiki/Punctuated_equilibrium

Over what time scale does such evolutionary change occur? Morris stated (p. 107):

According to Eldredge and Gould, evolution was not something that took place over periods of many millions of years. Adaptation over periods of tens of thousands of years was more likely. When the fossil record was examined, the appearance of sudden evolutionary change was evident. As I pointed out previously, a period of 100,000 years is a “geological instant” compared to the many of millions of years represented by the rock strata that scientists study. Thus a period of tens of thousands of years would be only a fraction of an instant.

Morris concluded (p. 107):

Eldredge’s and Gould’s findings seemed to imply that, most of the time, natural selection acted to keep species stable. It produced evolutionary change only when a new species arose and had to adapt to local conditions. After all, if a species was already adapted to its environment, further change was likely only to lower the average fitness of the individuals that made up the species. If Eldredge and Gould are correct, then natural selection, too, seems to follow the principle “If it ain’t broke, don’t fix it.”

Fossilization of a life form and its later discovery is extremely rare. In line with the above quotations, Morris had earlier stated (p. 102):

What the geological record does show us is that a species living at one time is often replaced by another species living millions of years later. It is perfectly plausible, indeed likely, that the first species that is found did not gradually evolve into the second but was replaced by the latter when it migrated into the region.

Alternatively, the first species may no longer be living in that region when members of the second arrive. When climatic conditions change, species generally do not try to adapt to the new conditions. They migrate.

Morris concluded with a description of Punctuated Equilibrium (p. 103):

It appears that the fossil record has exactly the character it should have if Darwin’s theories of natural selection and gradualism are correct. There should be gaps for the simple reason that species typically do not remain in the same place over very long periods of time. When one fossil is found above another in layers of sedimentary rock, it is possible, indeed probable, that the second evolved somewhere else. Fossils found at a given geological site will not exhibit a series of small evolutionary gradations if evolution happened elsewhere.

Morris went on to discuss “evolutionary stasis”, and how Niles Eldredge, as a young graduate student, had had to revise his views of evolutionary gradualism as a result of his study of trilobite fossils. He stated (p. 104):

[Eldredge gradually] began to realize that **he had rediscovered a phenomenon that had been well known to paleontologists who had been contemporary with Darwin. These paleontologists were aware that species were very stable entities. Stasis, not gradual change, was the norm in the fossil record.** And, in fact, all five of the paleontologists who had written reviews of Darwin’s *On the Origin of Species* upon its appearance in 1859 had pointed out this fact.

Morris then answered the obvious question that Eldredge’s rediscovery had brought up (pp. 104-105):

So why, then, wasn’t the fact of evolutionary stasis generally known? Apparently paleontologists had adopted the orthodox idea of gradual evolutionary change and had held onto it, even when they discovered evidence to the contrary. They had been trying to interpret fossil evidence in terms of accepted evolutionary ideas. They had seen stasis in various evolutionary lineages over and over again and had not realized that they were observing something important.

That they did not do so isn’t as surprising as you probably think. Scientists normally interpret the facts they observe in terms of existing theory. If they didn’t do this, it would be impossible to do science at all. If a new theory were created to explain every new experimental result or empirical observation, the result would be

chaos. So scientists habitually try to fit their results into existing theoretical frameworks. Normally, this works pretty well. Of course there are sometimes anomalous results of one kind or another, but in most cases, they can be safely ignored or explained away. Quantities are sometimes measured inaccurately, and observations can be influenced by extraneous factors.

But sometimes the apparent anomalies aren't that at all. Sometimes they reveal something significant. Sometimes scientists see a phenomenon that accepted theory failed to predict. As Eldredge pondered the evolutionary stasis he had found in his trilobites, he began to wonder if perhaps he hadn't stumbled onto something important. If the stasis he saw was real, it might indicate that accepted ideas about gradual evolution were not entirely correct.

Morris then explained why Eldredge's anomaly is not a problem for the Theory of Evolution, because it merely revealed, in a clear manner, that evolution of populations sometimes occurs gradually and sometimes rapidly (p. 106):

You shouldn't imagine that Eldredge's findings cast any doubt on the idea of natural selection. He had only observed that certain species had remained static for long periods of time. They had certainly evolved from earlier forms, and natural selection was the only thing that could have caused them to do so. On the other hand, the existence of stasis implied that evolution might not always be the gradual process that Darwin had envisioned. And if this was the case, there were other implications. If evolution could, in effect, grind to a halt for long periods of time, then there would have to be other periods during which it proceeded more rapidly.

The above discussion shows how, as mentioned on page 187, the *Origin* brochure fails to give any context for its quote-mine of Morris. This again proves the scholastic dishonesty of Watch Tower writers.

On page 26 the *Origin* brochure hypocritically continues slandering the science community, accusing it of scholastic dishonesty:

What about evolutionists today? Could it be that they continue to place fossils in a certain order, not because such a sequence is well-supported by the majority of fossil and genetic evidence, but because doing so is in harmony with currently accepted evolutionary ideas?

The information I've presented above shows that the answer is: No. Fossils are placed "in a certain order" largely by their age as shown by various dating methods, including the established ages of the types of strata in which they are found. It so happens that in a great many cases, fossils of older and younger species within that order also show a succession of body types—usually not a linear succession but a bushy one—such as the progressions shown in the above section on Macroevolution (p. 59), and particularly clearly, the subsection on the transition from fish to amphibians (p. 68).

The *Origin* brochure has a box on page 26 that shows exactly what false conclusion its writer wants his readers to come to:

If "95 frames" of the fossil record show that animals do not evolve from one type into another, why do paleontologists arrange the remaining "5 frames" to imply that they do?

But the writer has presented no such evidence about "95 frames". Rather, he has presented several misleading questions, accompanied by misleading misquotations of scientists. His final leading question is simply a lie.

This section began by considering the *Origin* brochure's question, "What Does the 'Film' Really Show?" But the brochure, rather than giving specific examples of what the "film" really shows, merely gives a couple of bogus arguments accompanied by a couple of misrepresentative, out-of-context quotations. Readers get no clear picture of Watch Tower teaching about creation and evolution other

than “God did it” and “evolution is wrong”. This leaves the intended audience of Jehovah’s Witnesses defenseless against knowledgeable critics. A Jehovah’s Witness reader is left unable “to make a defense before everyone who demands of you a reason for the hope you have” (1 Peter 3:15). By lying and misrepresenting and giving easily debunked arguments, Watch Tower writers have fallen down on their self-appointed job of teaching truth to those they claim to view as the “flock of God”.

Next (pp. 26-29), the *Origin* brochure considers the question:

What About Human Evolution?

In the usual Watch Tower fashion, this section (pp. 27-29) presents incomplete and biased information, uses obsolete views of science, sets forth straw men and irrelevant arguments, engages in quote-mining, and gives no real consideration to what a quoted author meant. It is a study in confirmation bias, where the author’s preconceived conclusion that “evolution is wrong” dictates what information he presents. Some statements are outright lies. By using incomplete information and ignoring all facts that go against traditional Watch Tower teaching, it severely undermines that teaching in the eyes of honest persons who know something about science.

The section begins (p. 27) with a false claim and a misrepresentation. Referring to graphics on pages 27 and 29 that depict a popularized but obsolete and incorrect view of human evolution, it says:

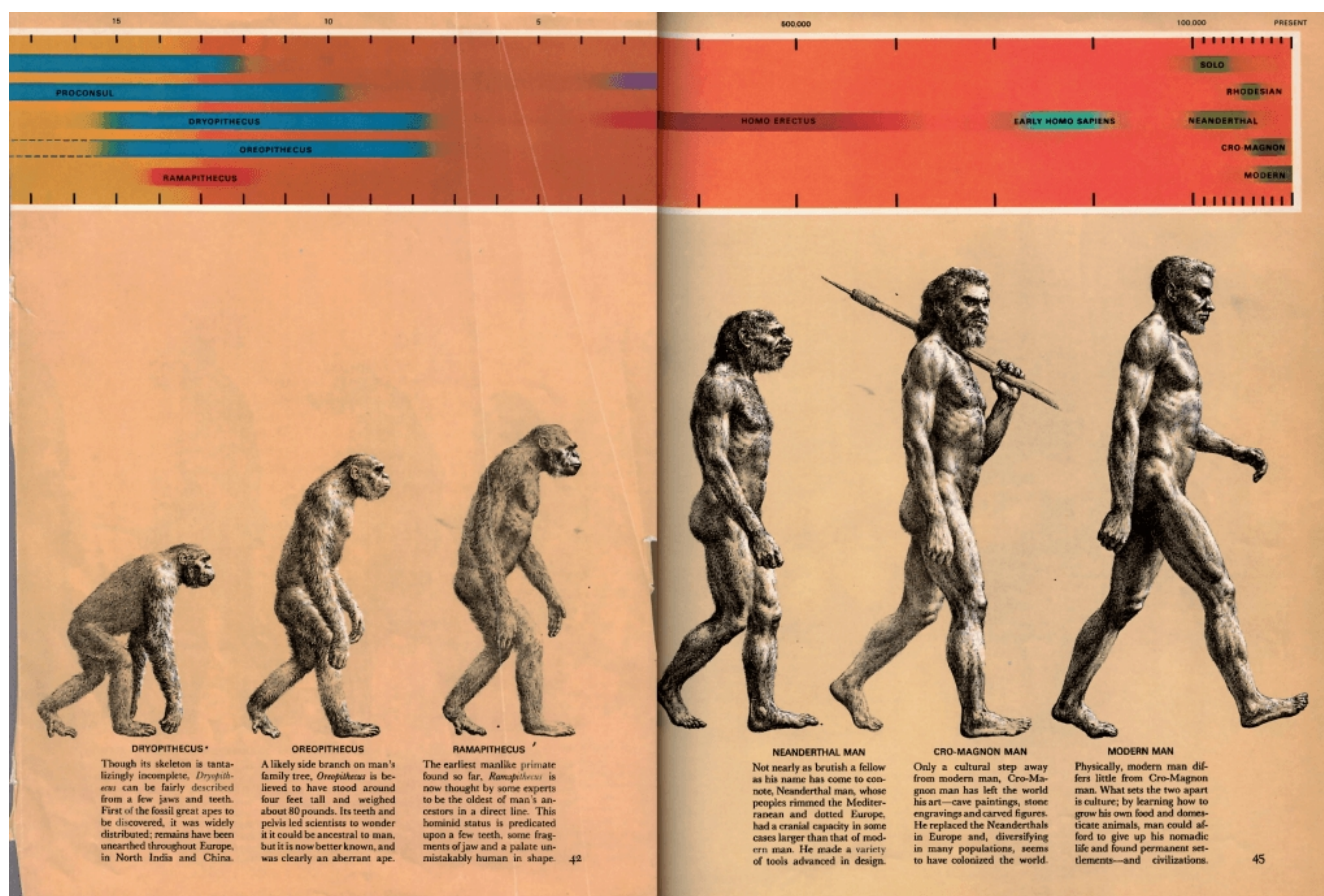
Look up the topic of human evolution in many textbooks and encyclopedias and you will see a series of pictures —on one side a stooped, apelike creature followed by creatures that have progressively more upright posture and larger heads. At the end stands modern man. Such renderings along with sensational media reports of the discovery of so-called missing links give the impression that there is ample evidence that man evolved from apelike creatures. Are such assertions based on solid evidence? Consider what evolutionary researchers say about the following topics.

Typically, the writer gives no references to “textbooks and encyclopedias” that display such a “series of pictures”—with good reason—there are few. Such references do not normally display such a series as an illustration of human evolution, so the writer is giving the reader yet another straw man. Rather, such pictures often appear in popular media—not scientific references.

The original picture, called “The Road to Homo Sapiens”, and colloquially “The March of Progress”, was created in 1965 for the volume *Early Man* in Time-Life Books’ *Life Nature Library*.⁴¹⁸ This was a coffee-table book intended for a popular audience. An abbreviated picture from Time-Life⁴¹⁹ is shown below. The complete picture is shown in the footnoted web page. Compare it to the pictures in the *Origin* brochure.

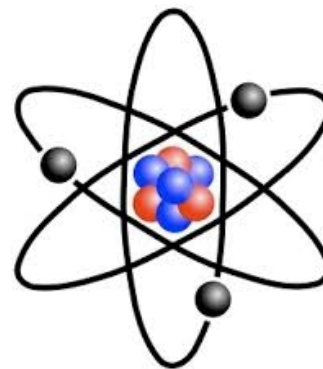
⁴¹⁸ <https://sites.wustl.edu/prosper/on-the-origins-of-the-march-of-progress/>
https://en.wikipedia.org/wiki/March_of_Progress
<https://yalealumnimagazine.com/articles/3977-march-of-progress>

⁴¹⁹ <https://sites.wustl.edu/prosper/on-the-origins-of-the-march-of-progress/>



The “evolutionary sequence” depicted was obsolete by the late 1940s⁴²⁰ because by then, evolutionary biologists were well aware that evolution is not a linear progression from simple to complex, but consists of sequences of organisms that form a branching, bushy picture whose structure can be known only approximately because the fossil record is incomplete. The sequence depicted in “The March of Progress” may be fine for a popular, overly simplified coffee-table book, but not for serious students. That is why the *Origin* brochure uses it.

The brochure’s use of an obsolete picture can be compared to the way journalists often use the obsolete picture of electrons orbiting the nucleus of an atom. This picture was proposed in 1913 by physicist Neils Bohr,⁴²¹ but by 1925 the maturing science of quantum mechanics showed that it was wrong—electrons do not in any meaningful sense orbit the nucleus, as planets orbit the sun in our solar system. Rather, no meaningful picture can be drawn at all. But the needs of popular journalism often dictate that inaccurate information be presented rather than more complicated but accurate descriptions. Basing an exposition on obsolete information bespeaks profound ignorance or dishonesty on the part of the expounder.



⁴²⁰ <https://en.wikipedia.org/wiki/Orthogenesis>

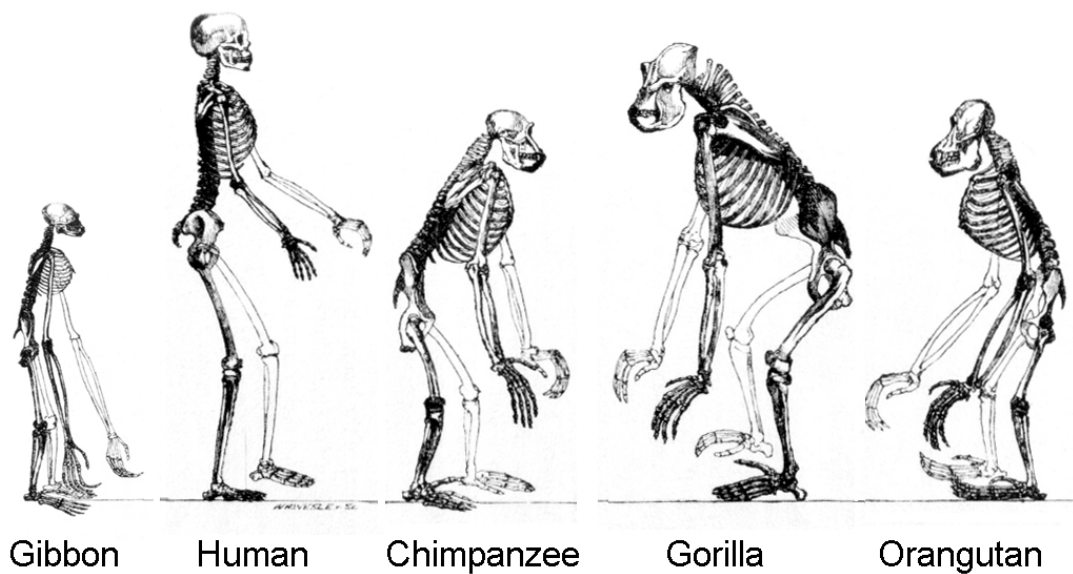
⁴²¹ https://en.wikipedia.org/wiki/Bohr_model

What the Fossil Record Shows

The *Origin* brochure next purports to present evidence as to what the fossil record *actually* shows, as opposed to what biologists merely *claim* it shows. But it presents no such evidence. Rather, it presents out-of-context quotations about what the fossil record does *not* show, along with a few irrelevancies and straw men.

The following material shows what is actually in the fossil record by presenting drawings and photos of fossil skulls and skeletons compared with each other and with modern human skulls and skeletons in their proper time sequence. This barely scratches the surface of the available information. Interested readers can find all manner of good scientific treatments by visiting appropriate websites⁴²² and obtaining books such as are found in the footnotes and the bibliography. In particular, the excellent book *From Lucy to Language* by Donald Johanson is the source for many of the photos below.

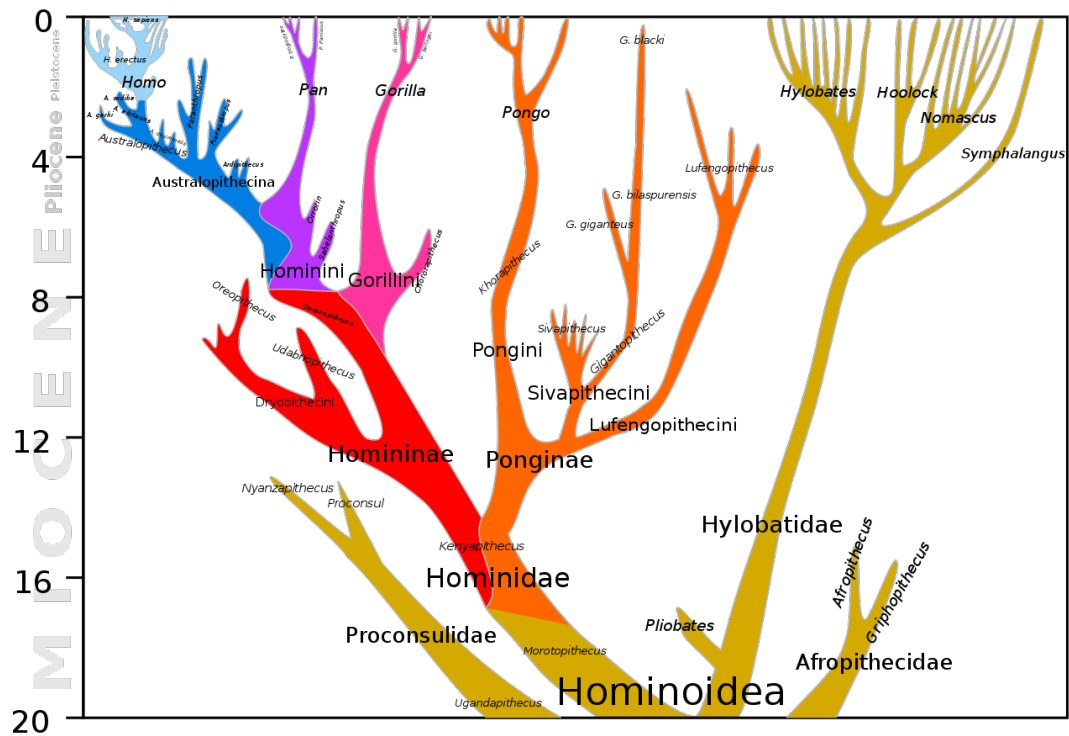
Before looking at the *Origin* brochure's claims, let's look at some modern hominoid (greater and lesser apes) skeletons.⁴²³ These have obvious similarities and differences in their skeletons and skulls. The similarities are the basis for the evolutionary claim that they have a common ancestor.



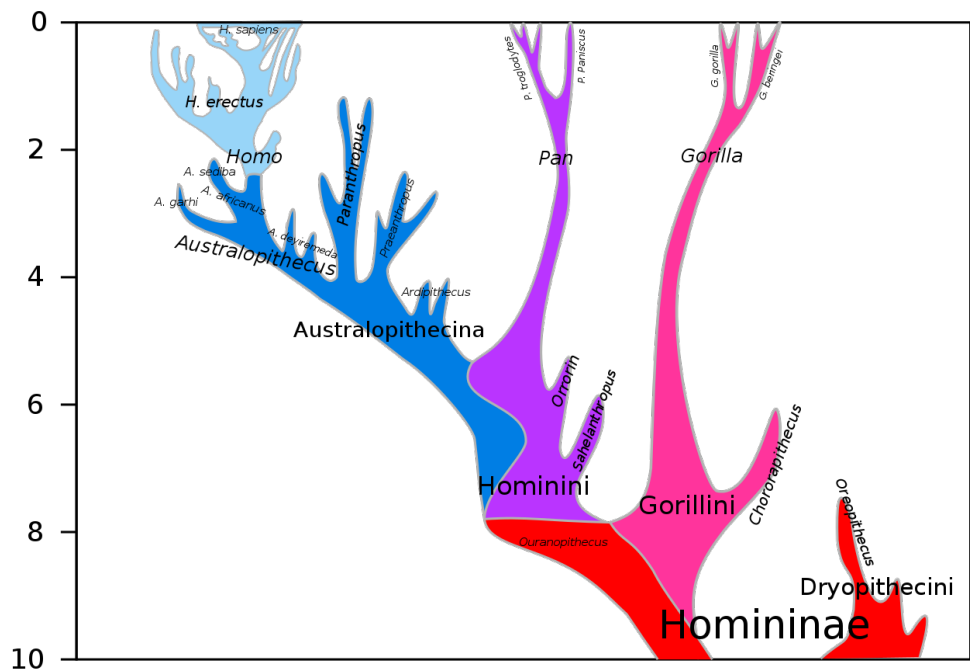
⁴²² An overall view of human evolution; critical skeletal details: <https://www.youtube.com/watch?v=dKvgd89ipDs>

⁴²³ Pictures in this section are taken from several web pages such as https://en.wikipedia.org/wiki/Human_evolution .

Here is a commonly accepted branching diagram for the hominoids and other primates:⁴²⁴



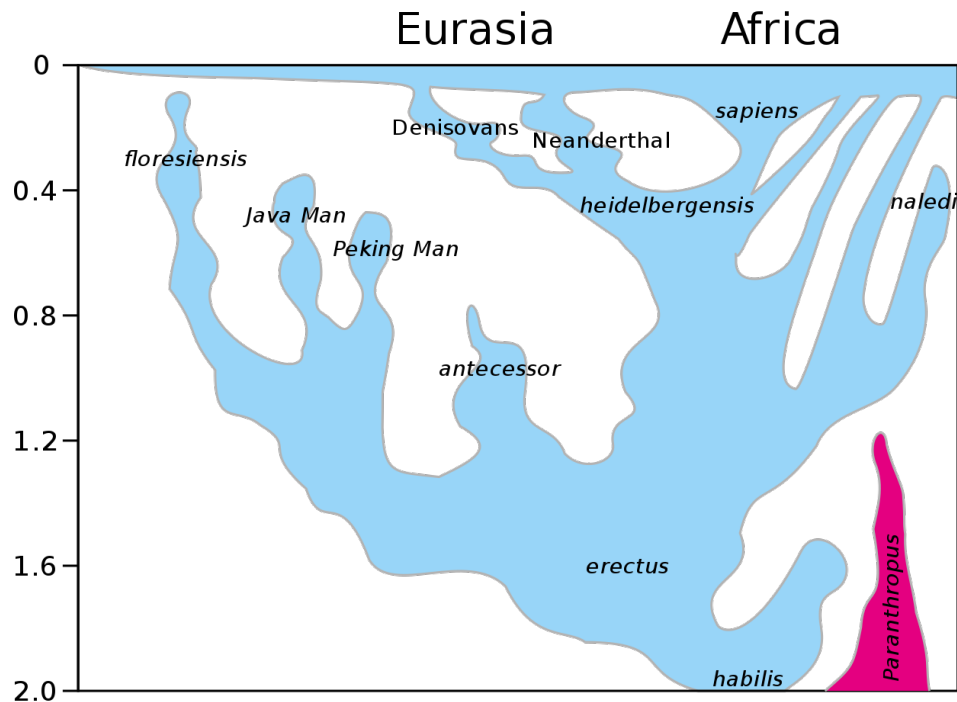
Here is a commonly accepted branching diagram for the hominins and gorillas:⁴²⁵



⁴²⁴ <https://en.wikipedia.org/wiki/Hominidae>

⁴²⁵ <https://en.wikipedia.org/wiki/Hominini>

Here is a branching diagram for the genus Homo:⁴²⁶



In terms of the illustration of the fossil record as a woefully incomplete film, the above branching diagrams show that a good illustration of “human evolution” would be a set of films missing most frames. Putting the frames in a sequence would be much harder than for a single film.⁴²⁷

Until about the 1970s, evolutionary biologists thought that brain size was the first characteristic to change over time as hominins evolved, but new fossil finds showed that upright walking was the first major change. Only much later did brain size enlarge.

One of these fossil finds was the famous track of humanlike footprints called the Laetoli Footprints,⁴²⁸ discovered in 1976 in Tanzania. These consisted of three separate footprint tracks, two adults and a child, dated to about 3.7 million years ago. These have been attributed to the famous Lucy type (*Australopithecus afarensis*). More recent finds called *Ardipithecus ramidus* and others have been dated to about 4 to 5.5 million years.

These upright-walking creatures would have looked to modern eyes somewhat like an upright-walking chimpanzee with a chimp’s head, because in addition to the upright skeletal features, many of their skull features, including brain size, were similar but not identical to those of modern chimps. Of course, today there are no creatures like that. And of course, at the time these creatures lived, chimpanzees and bonobos also lived, but in forests rather than savannas.

Roughly 2.5 to 3 million years ago, for reasons as yet unknown but much speculated upon, the brains of some upright-walking Australopithecines began to enlarge. Various other characteristics also

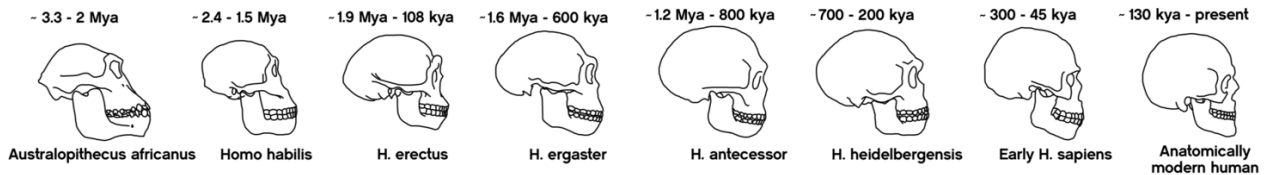
⁴²⁶ https://en.wikipedia.org/wiki/Human_evolution

⁴²⁷ See https://www.youtube.com/watch?v=9W005V6OV_E for how this applies to human evolution, and for much information that explains how evolution works, as opposed to the caricatures portrayed in Watch Tower literature.

⁴²⁸ <https://en.wikipedia.org/wiki/Laetoli>

evolved, giving rise to several species of hominins, as indicated in the above branching diagrams. Primitive stone tools also appeared. One can find helpful online videos showing these ideas.⁴²⁹

Here is an abbreviated sequence of skulls showing branches in the tree of hominid evolution arranged roughly by the age of the fossils:⁴³⁰



By now it should be clear to readers that, contrary to what the *Origin* brochure claims, biologists do not arrange fossil skulls according to a predetermined evolutionary sequence but by the age of the fossils. The general increase in brain size is a *consequence* of the age sequence.

Watch Tower writers are either too ignorant of science or too stubborn to admit that this age sequence exists. Of course, given the maximum age they allow for such fossils—either 6,000 or 4,400 years—they have little choice but to reject science. Otherwise they would have to completely revamp their “Bible chronology” and much of their theology. This is the same problem they have with the completely wrong sequence of appearance of life as stated in Genesis, as discussed on page 145.

Let’s compare some representative hominoid skeletons to see the similarities and differences.

Below are views of modern human and chimpanzee skeletons. The human skeleton has many optimizations for upright walking,⁴³¹ such as knee joints that are angled so as to place the body more directly above the feet, and that have structures that lock in place in a standing position, a pelvis suited to an upright stance, feet that work well in walking and running as opposed to climbing in trees, and a neck that attaches to the skull right underneath it. The chimp skull attaches to the neck more at the rear, suitable for four-legged walking such that the eyes face forward in the normal stooped walking posture.⁴³² One can find any number of online sources for comparisons of the anatomy of humans and chimps.⁴³³

⁴²⁹ cf. <https://www.youtube.com/watch?v=DZv8VyIQ7YU>

This shows steps in the evolution of upright walking in several transitional species:

<https://www.youtube.com/watch?v=-4d-vvgydPs>

⁴³⁰ https://en.wikipedia.org/wiki/Human_evolution

⁴³¹ Discussion of the origins of bipedalism: <https://www.youtube.com/watch?v=K8c9lemvciI>

<https://www.youtube.com/watch?v=AvOh9OKTq8g>

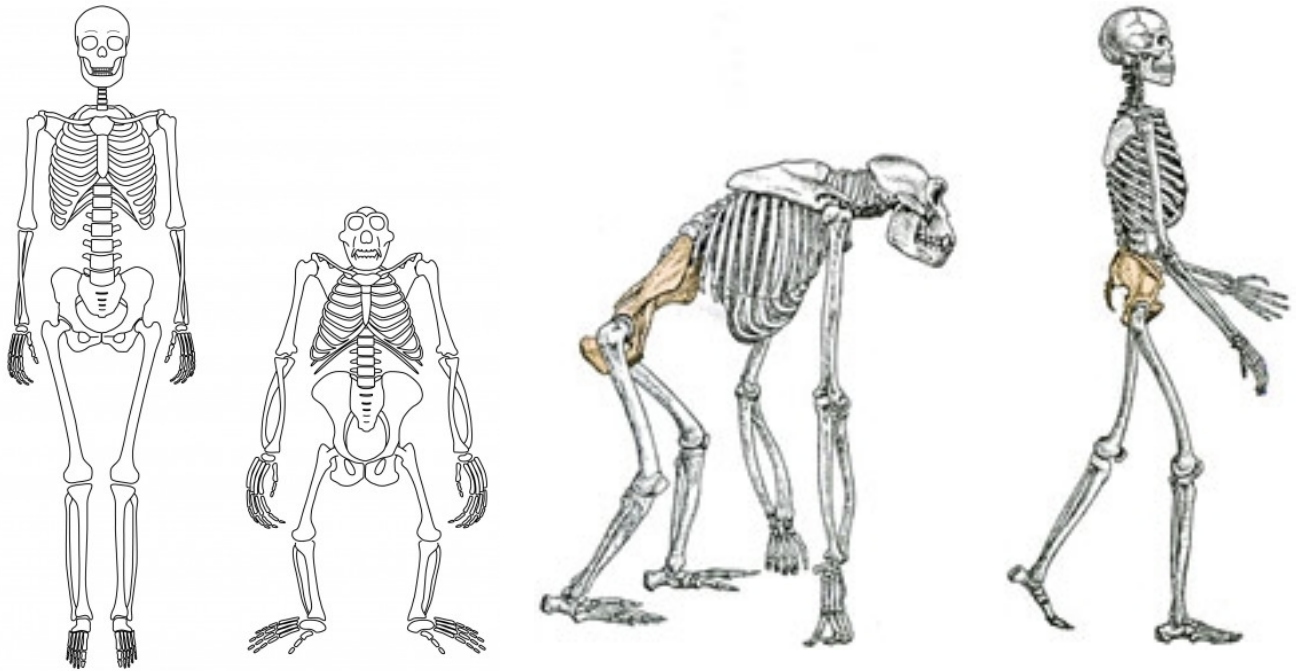
Running: <https://www.youtube.com/watch?v=YTv5KhUtbx0>

<https://www.youtube.com/watch?v=DCPQK7OdhUY&t=59s>

⁴³² <https://www.sciencedaily.com/releases/2013/09/130926111903.htm>

<https://carta.anthropogeny.org/moca/topics/foramen-magnum-placement>

⁴³³ cf. <https://www.civildserviceindia.com/subject/Anthropology/notes/comparative-anatomy-of-man-and-apes.html>

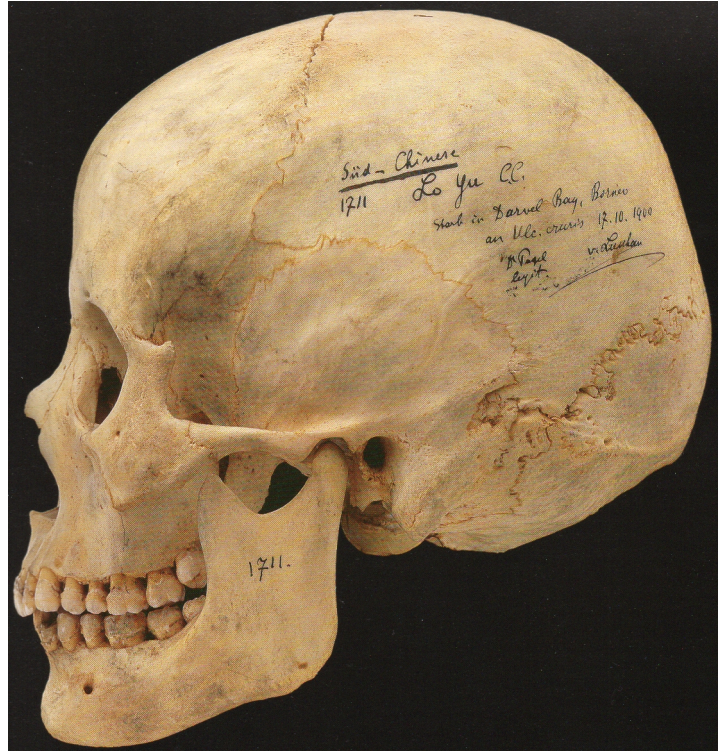
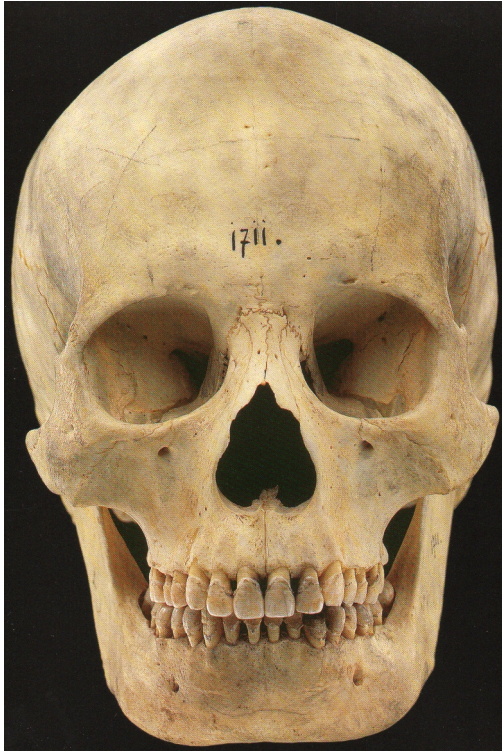


Below are shown for comparison a chimpanzee, a reconstructed Lucy (*A. afarensis*), and a modern human. Note the characteristics of each, as described above. Lucy and the human are to scale. Note in particular that Lucy looks more or less like an upright walking chimp with a chimp head. Its skeleton is obviously intermediate between the chimp and the human, except for size. It is not merely an extinct ape, as the *Origin* brochure claims.



A YouTube video titled "Walking With Lucy" from the California Academy of Sciences clearly illustrates these concepts: <https://www.youtube.com/watch?v=xT8Np0gI1dI>

Now look at the skulls of a modern human and a chimpanzee. The similarities and differences are obvious.



Compare this skull of Lucy (*A. afarensis*) with that of the chimpanzee above. Brain sizes are comparable, but other features are quite different. The hole where the spine enters (foramen magnum) is more forward, indicating upright walking.⁴³⁴ The canine teeth are much smaller. Age: about 3.9 to 2.9 million years.⁴³⁵



Skull of *Australopithecus africanus*, slightly later in the fossil record than the above Lucy type. Note the slightly flatter face. Brain sizes are about the same as that of chimpanzees. Age: about 3.7 to 2 million years.⁴³⁶



⁴³⁴ <https://www.sciencedaily.com/releases/2013/09/130926111903.htm>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2981961/>

⁴³⁵ https://en.wikipedia.org/wiki/Australopithecus_afarensis

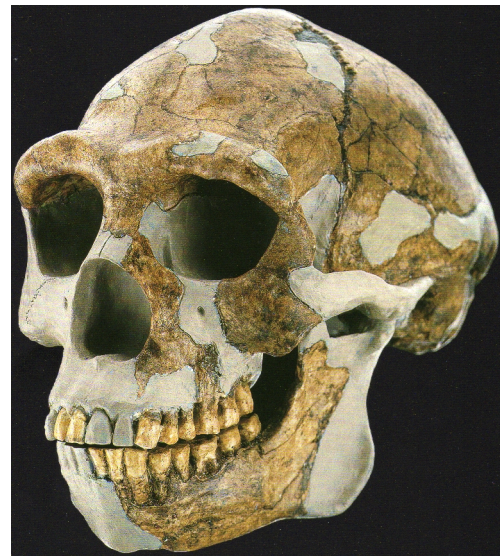
⁴³⁶ https://en.wikipedia.org/wiki/Australopithecus_africanus

Homo habilis. Age about 2.4 to 1.5 million years.⁴³⁷

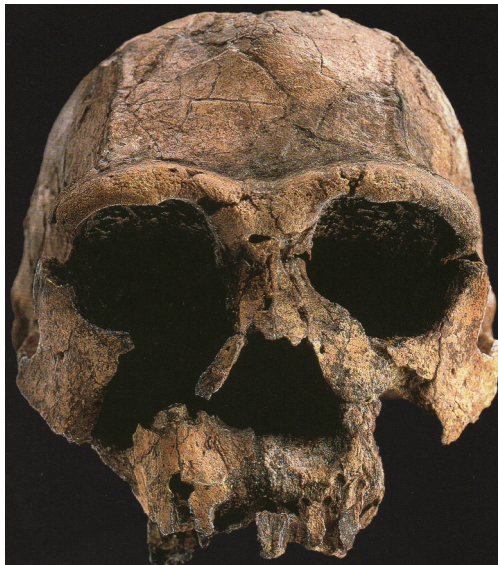


⁴³⁷ https://en.wikipedia.org/wiki/Homo_habilis

Skulls of Nariokotome (Turkana) boy (1.5-1.6 Ma)⁴³⁸ and “Peking Man” (750,000 to 300,000)⁴³⁹. Paleontologists have classified these skulls as *Homo ergaster* or *Homo erectus*, although recent practice has been to lump all of them into *H. erectus*.⁴⁴⁰ There are so few fairly complete skulls that it is not clear whether these are different species, or specimens of a species that varied widely in skull morphology in space and time. From here on I will generally lump them together as *Homo erectus*. Brain size is nearly double that of chimps and about 60% that of modern humans. Age: about 2 million to 100,000 years, depending on the source and details of classification.



Another *Homo ergaster* (*erectus*) skull (KNM ER 3733).⁴⁴¹ Age about 1.6 Ma.



⁴³⁸ https://en.wikipedia.org/wiki/Turkana_Boy

⁴³⁹ https://en.wikipedia.org/wiki/Peking_Man

⁴⁴⁰ For an informative introduction: <https://www.youtube.com/watch?v=YixX6kEGok8>

More skulls: <https://www.youtube.com/watch?v=zcQLBI3Um44>

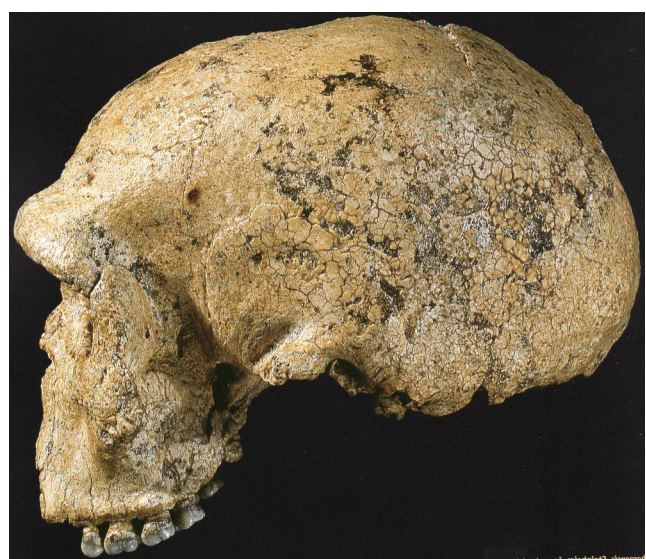
⁴⁴¹ https://en.wikipedia.org/wiki/KNM_ER_3733

It is generally thought that *Homo erectus/ergaster* gave rise to several later species: *Homo antecessor* (1.2 to 0.8 million years)⁴⁴² and later *Homo heidelbergensis* (800,000 to 200,000 years)⁴⁴³ (these used to be lumped together as archaic *Homo sapiens*). Brain sizes comparable to modern humans.

Homo heidelbergensis: Broken Hill and Atapuerca specimens.



Petralona and Steinheim specimens.



⁴⁴² https://en.wikipedia.org/wiki/Homo_antecessor

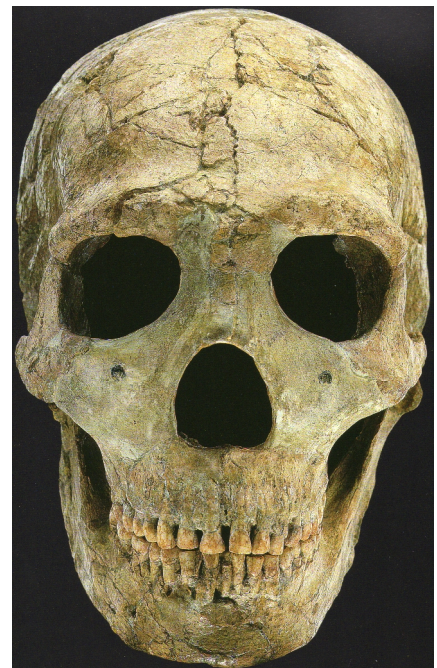
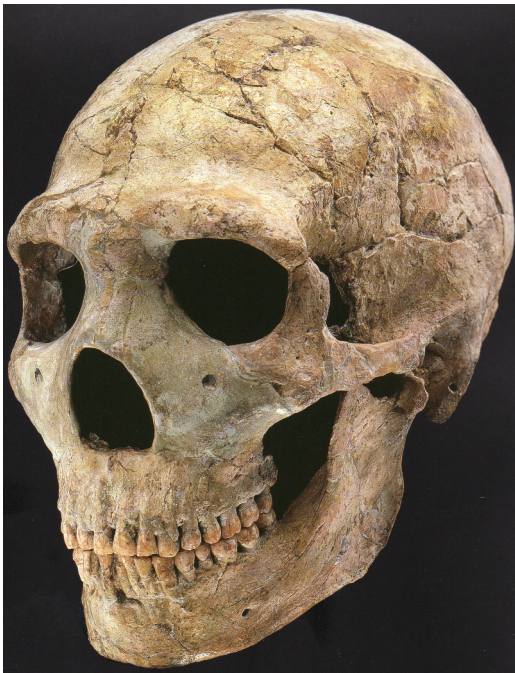
⁴⁴³ https://en.wikipedia.org/wiki/Homo_heidelbergensis

It is generally thought that *Homo heidelbergensis* split at various times into Neanderthals, Denisovans, modern *Homo sapiens*, and perhaps other subspecies, between perhaps 800,000 and 300,000 years ago.

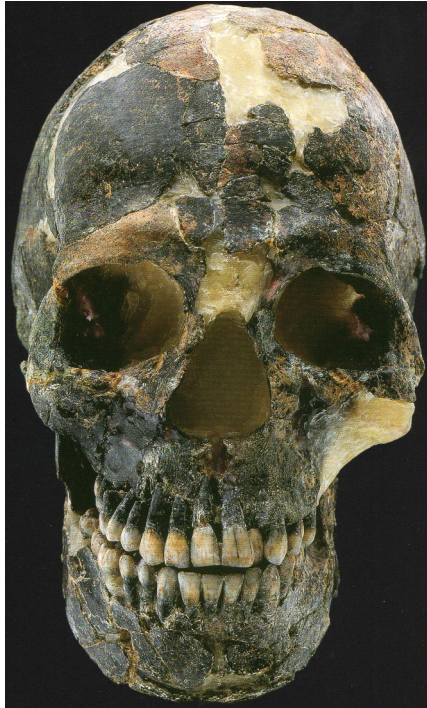
Homo neanderthalensis: La Chapelle Aux Saints and La Ferrassie 1 specimens.



Amud 1 specimen.



Homo sapiens: Qafzeh IX specimen. Age about 80,000 to 120,000 years.⁴⁴⁴



Skuhl V and Cro Magnon I specimens. Ages about 100,000 and 30,000 years.⁴⁴⁵



⁴⁴⁴ https://en.wikipedia.org/wiki/Skhl_and_Qafzeh_hominins

⁴⁴⁵ <https://humanorigins.si.edu/evidence/human-fossils/fossils/cro-magnon-1>

Now that we have the skulls of some hominids arranged by age, from about 4 million years old to modern humans, let's compare some more or less complete skeletons. From left to right:

Chimpanzee, Lucy (*A. afarensis*), Nariokotome boy (*H. erectus*), Neanderthal.

Ages: modern, 3.9-2.9 Ma, 1.6 Ma, 450-30 Ka.



Comparing these with one another and with the modern human skeleton on page 197, it is obvious that there is a progression in hominid structure that corresponds with the progression in time. These progressions define the proposed ancestry trees in the branching diagrams (cladograms) shown on page 194. The overlap in time of the various skeletal structures again deserves comparison with a set of films missing most of their frames. Only someone who is extremely stupid or stubborn can deny the obvious sequences.

Much has yet to be explained regarding human and human-like fossils and hominid evolution. For example, the recent set of fossils called *Homo naledi*⁴⁴⁶ seems structurally much like a combination of the Australopithecenes and *H. erectus*, but at about 300,000 old is contemporaneous with the oldest anatomically modern *H. sapiens*. These fossils present many mysteries. Recent finds of “Oldowan tools” dating back to 3.5 million years shows that hominid toolmaking is a million years older than previously believed.⁴⁴⁷

⁴⁴⁶ cf. <https://www.youtube.com/watch?v=JzmcKELkWFw>

⁴⁴⁷ <https://www.youtube.com/watch?v=CazsHKnxmHQ>

Those who disagree with scientists on their interpretation of all these fossils is free to come up with their own interpretation and try to get it accepted by the scientific community. However, it goes without saying that young-earth creationists and those who stubbornly assign dates less than 6,000 years to all human and human-like fossils will have no success—not because of scientific prejudice, but because far too much evidence exists in favor of the antiquity of hominids.

Now that the reader has some idea of what is actually in the fossil record regarding human evolution, let's see what the *Origin* brochure says about it.

Having gotten off to a bad start, the brochure continues in the same vein:

What the Fossil Record Actually Shows According to the *Origin* Brochure

This section of the brochure (p. 27) is highly misleading, because it actually says nothing about what the fossil record shows. Rather, it argues that evolutionary biologists have not been able to prove *exactly* when and how the evolution from early ape-like creatures to full-blown humans occurred. It shows nothing of the fossil information presented in the above pages.

The brochure correctly states that “the vast majority of [fossils used to support the common ancestry of humans and apes] consist only of single bones and isolated teeth. Complete skulls—let alone complete skeletons—are rare.” But this is a misleading straw man, partly because the entire fossil record is well known to be extremely incomplete, and partly because a relatively small amount of fossil evidence is not *zero* evidence. The many photos and references shown above prove it.

Next, the brochure asks a straw-man question:

Has the increased number of fossils attributed to the human “family tree” settled the question among evolutionary experts as to when and how humans evolved from apelike creatures?

Anyone even slightly familiar with the topic of human evolution knows that the question is not now *settled*, and *never will be fully settled*. Scientists freely state that nothing in science is ever settled with the certainty of a mathematical proof, because science does not work that way. And of course, there is always the problem that experts in any field disagree on any number of details, as well as the fact that non-experts can be found who disagree with science about almost everything. That many people believe the earth is flat illustrates this fact.

The point is that absolute certainty in science does not exist—science is not like pure mathematics—but that a scientific question can be settled “to such a degree that it would be perverse to withhold provisional assent” (See page 57).

Furthermore, the brochure speaks of the human “family tree” without being clear about exactly what that means. It is painfully obvious that, if the writer is not being blatantly obscurantist, he has no idea what he is talking about.

“Human family tree” is far too general in scientific terms to be meaningful. This sort of vagueness is entirely inappropriate in a publication purporting to criticize a scientific theory. Scientific nomenclature in the field of human evolution has changed many times, and is certainly confusing, often to specialists and especially to laymen, but to be clear the brochure's writer should have used it.

“Apelike creature” is also far too vague to be meaningful here. In common parlance, it might refer to any creature that looks even vaguely like a ‘monkey’, from lemurs to tarsiers to New World monkeys to Old World monkeys to gibbons to orangutans to gorillas to chimps to humans. Even the

term “ape” is vague, having evolved considerably in common usage for several hundred years.⁴⁴⁸ In common usage, “ape” excludes humans but in scientific usage “ape” includes humans. Genetic studies show that chimpanzees and humans are more closely related than either is to gorillas.

A Wikipedia article shows the most current nomenclature⁴⁴⁹ in terms of a cladogram (see page 186). At the top of the cladogram is the clade *Hominoidea* (greater and lesser apes). This splits into gibbons (lesser apes) and *Hominidae* (great apes). This splits into orangutans and *Homininae* (hominins, or chimpanzees and humanoids). This splits into chimpanzees and Australopithecines. This splits several more times into various “humanoid” branches on the evolutionary tree, with *Homo* (humans) at the farthest branch. Within *Homo* are *Homo erectus*, *Homo heidelbergensis*, *Homo neanderthalensis*, *Homo sapiens*, etc.⁴⁵⁰

The *Origin* brochure’s writer ignores all this complexity.

The brochure next answers its own question and inserts red herrings into its narrative:

No. In fact, the opposite is true. When it comes to how these fossils should be classified, Robin Derricourt of the University of New South Wales, Australia, wrote in 2009: “Perhaps the only consensus now is that there is no consensus.”⁴⁰ In 2007 the science journal *Nature* published an article by the discoverers of another claimed link in the evolutionary tree, saying that nothing is known about when or how the human line actually emerged from that of apes.⁴¹ Gyula Gyenis, a researcher at the Department of Biological Anthropology, Eötvös Loránd University, Hungary, wrote in 2002: “The classification and the evolutionary place of hominid fossils has been under constant debate.” This author also states that the fossil evidence gathered so far brings us no closer to knowing exactly when, where, or how humans evolved from apelike creatures.⁴²

Let’s consider the above statements as if they form a logical sequence:

No. In fact, the opposite is true.

Fair enough: the question at hand—when and how humans evolved from apelike creatures—is not *fully* settled among experts. But so what? The “film” shows enough sequences in time and skeletal structures to prove to an unbiased person that evolution of *some* kind has occurred over the past five to six million years. Whether that evolution is due to naturalistic means, theistic means, or any other means, is irrelevant to this *fact* of evolution.

Next comes a red herring. This is a red herring because the writer subtly switches the question from when and how *humans* evolved to how fossils attributed to the “human family tree” should be classified, which is a rather different question:

When it comes to how these fossils should be classified, Robin Derricourt of the University of New South Wales, Australia, wrote in 2009: “Perhaps the only consensus now is that there is no consensus.”⁴⁰

Note that Derricourt was talking about *hominins*, not some ill-defined “human family tree”. He stated (p. 197)⁴⁵¹ that “about seven genera and 26 species names are currently in use”. Was the brochure’s author including gibbons in the “family tree”? Or chimpanzees? Or Australopithecines? Or just those listed above as *Homo*? He has no idea.

Speaking of classifying *hominins*—not *all* the species within *Hominoidea*—Derricourt actually wrote (p. 198):

⁴⁴⁸ <https://en.wikipedia.org/wiki/Ape>

⁴⁴⁹ <https://en.wikipedia.org/wiki/Hominini>

⁴⁵⁰ <https://en.wikipedia.org/wiki/Homo>

⁴⁵¹ *Critique of Anthropology*, Volume 29(2): 12, June 1, 2009, pp. 193-204, “Patenting Hominins—Taxonomies, Fossils and Egos,” Robin Derricourt.

There has been a substantial number of different classificatory schemes, both from those associated with the newer discoveries and from those standing to one side of these. Perhaps the only consensus now is that there is no consensus.

Derricourt went into detail as to why there is no consensus about classifying the 26 species of hominins he referred to. The reader may read the article for himself.

The brochure's next bit of "answer" switches gears from hominins to talking about a "link in the evolutionary tree" and "when or how the human line actually emerged from that of apes":

In 2007 the science journal *Nature* published an article by the discoverers of another claimed link in the evolutionary tree, saying that nothing is known about when or how the human line actually emerged from that of apes.⁴¹

Including the context, the *Nature* article said:⁴⁵²

With the discovery of *Ardipithecus*, *Orrorin* and *Sahelanthropus*, our knowledge of hominid evolution before the emergence of Pliocene species of *Australopithecus* has significantly increased, extending the hominid fossil record back to at least 6 million years (Myr) ago. However, because of the dearth of fossil hominoid remains in sub-Saharan Africa spanning the period 12–7 Myr ago, nothing is known of the actual timing and mode of divergence of the African ape and hominid lineages. Most genomic-based studies suggest a late divergence date —5–6 Myr ago and 6–8 Myr ago for the human–chimpanzee and human–gorilla splits, respectively.

Note that the *Nature* article carefully specified hominoid remains as being in the period 12-7 million years ago, and hominid remains as in the period beginning about 6 million years ago. Given those periods, where would the author of the *Origin* brochure place the "human line" and the "ape line"? Especially since biologists place the "human line" within the "ape line"? Again the author is either completely ignorant or an obscurantist.

All of the above shows that the fossil record of hominoid (greater and lesser apes) evolution is too sparse to say much about *fine details* such as precisely when divergences happened, or exactly which ancestor species diverged into which descendant species.

Nevertheless, the blanks are gradually being filled in by new fossil discoveries. As has been discussed above, the science of cladistics has provided a good general idea of how various fossils are related structurally. And genetics shows clearly the relationships among the various creatures. Such information, along with reasonably firm dating of the fossils, provides a good basis for biologists to construct a tentative evolutionary tree for hominoid evolution.

As mentioned, the *Origin* brochure implies that *nothing* is known of how hominids emerged from hominoid ancestors, but the material it quotes says that *little—not nothing*—is known about the *exact details*.

The *Origin* brochure continues its grasping-at-straws attempt to imply that lack of exact how-when information somehow demolishes the notions of human evolution. As I pointed out, the brochure says nothing about "what the fossil evidence actually shows", but speaks only about what the evidence does *not* show. The quoted sentences are in reverse order.⁴⁵³

Gyula Gýenis, a researcher at the Department of Biological Anthropology, Eötvös Loránd University, Hungary, wrote in 2002: "The classification and the evolutionary place of hominid fossils has been under constant

⁴⁵² *Nature*, 448, August 23, 2007, pp. 921-924, "A New Species of Great Ape from the Late Miocene Epoch in Ethiopia", Gen Suwa, et al.

⁴⁵³ *Acta Biologica Szegediensis*, Volume 46(1-2):57-60, 2002, "New findings – new problems in classification of hominids", Gyula Gýenis. <http://www.sci.u-szeged.hu/ABS>

debate.” [p. 59] This author also states that the fossil evidence gathered so far brings us no closer to knowing exactly when, where, or how humans evolved from apelike creatures. [p. 57] 42

Once again: no one familiar with the subject of human evolution does not understand that the field is constantly debated. Gyenis wrote about the reasons for this:

One of the main reasons of the different interpretations of the evolutionary way of the hominids is that the classification and the evolutionary place of hominid fossils has been under constant debate. It is caused partly because hominid fossils are not plentiful—in spite of the growing number of the fossils—and perhaps partly because there are a number of rival discovery teams, and the importance of a new hominid fossil discovery is enhanced if the discovery apparently requires new classifications and/or new interpretations. [p. 59]

Going back to the illustration of a set of films lacking most of the frames, missing frames will of course cause differing interpretations of the fine details of the plot. But if enough frames exist to get a good idea of the overall plot, the missing ones will not significantly change that overall idea. That is pretty much the state of knowledge of hominid evolution today. New fossil discoveries do not significantly change the general picture, although exact details do change. That is why biologists are confident that the general picture of human evolution is reasonably correct.

The *Origin* brochure continues with its red herrings:

Announcements of “Missing Links”

The complaint here (p. 27) is little more than “Scientists make mistakes; therefore evolution is wrong!” Again no evidence against the theme of human evolution is presented.

Fact: The media often widely broadcasts the announcement that a new “missing link” has been discovered. For example, in 2009 a fossil dubbed *Ida* was unveiled with what one journal called “rock-star hype.”⁴³ Publicity included this headline in *The Guardian* newspaper of the United Kingdom (UK): “Fossil *Ida*: Extraordinary Find Is ‘Missing Link’ in Human Evolution.”⁴⁴ However, just days later, the UK science journal *New Scientist* said: “*Ida* is not a ‘missing link’ in human evolution.”⁴⁵

Question: Why is each unveiling of a new “missing link” given wide media attention, whereas the removal of that fossil from the “family tree” is hardly mentioned?

Answer: Regarding those who make these discoveries, Robin Derricourt, quoted earlier, says: “The leader of a research team may need to over-emphasize the uniqueness and drama of a ‘discovery’ in order to attract research funding from outside the conventional academic sources, and they will certainly be encouraged in this by the print and electronic media, looking for a dramatic story.”⁴⁶

In common parlance, when the context is “human evolution”, the term “missing link” has long referred to *a missing transitional form between modern humans and apes*. And that is what most readers of the *Origin* brochure will understand the above to be talking about. But that is not quite what *The Guardian* had in mind.

Furthermore, the brochure deliberately misleads the reader by lumping popular media such as *The Guardian*, meant for a non-scientific audience, with real science media.

While *The Guardian* usually prints good news stories, it is sometimes guilty of sloppy or hyperbolic writing. The *Origin* brochure again uses vague terminology—“missing link”—without clearly spelling out what it means. This, even though *The Guardian* was fairly clear:

Scientists have discovered an exquisitely preserved ancient primate fossil that they believe forms a crucial “missing link” *between our own evolutionary branch of life and the rest of the animal kingdom*.

The 47m-year-old primate – named Ida – has been hailed as the fossil equivalent of a “Rosetta Stone” for understanding the critical early stages of primate evolution.

So *The Guardian* article was not calling Ida a “missing link” between apes and humans, but between “the early stages of primate evolution” and “our own evolutionary branch of life”. The underlined term “a crucial missing link” was actually a hyperlink to text that carefully distinguished between the common parlance term and what the article was talking about:

As one of the most significant primate fossil finds ever made, Ida will be hailed by some as “the missing link” in our evolutionary history. But is that really true? Well, yes and no.

The phrase usually refers to the creature that links us to the apes, in particular the common ancestor of chimpanzees and ourselves. At 47m years old, Ida – or *Darwinius masillae*, to use her formal name – is much more ancient than that. But she is undoubtedly a very significant *link in the primate lineage* and the evidence from her extraordinarily well-preserved skeleton points to her being a very early member of our own primate line.

Clearly, then, *The Guardian* was not talking about any “missing link” between apes and humans, but about a link in the general primate lineage that appeared long before any purported “ape-men”. The *Origin* brochure completely misses this point and thereby misleads its readers.

Furthermore, the brochure completely ignores the many articles that immediately appeared that took issue with the hype in *The Guardian* and other venues. For example, the *New Scientist* (May 21, 2009) article “Why Ida Fossil Is Not the Missing Link”⁴⁵⁴ appeared two days after *The Guardian* article. It was a more sober view of the fossil, and took issue with the main theme of *The Guardian* article:

What does Ida’s anatomy tell us about her place on the family tree of humans and other primates? The fact that she retains primitive features that commonly occurred among all early primates, such as simple incisors rather than a full-fledged toothcomb, indicates that Ida belongs somewhere closer to the base of the tree than living lemurs do.

But this does not necessarily make Ida a close relative of anthropoids – the group of primates that includes monkeys, apes – and humans. In order to establish that connection, Ida would have to have anthropoid-like features that evolved after anthropoids split away from lemurs and other early primates. Here, alas, Ida fails miserably.

So, Ida is not a “missing link” – at least not between anthropoids and more primitive primates. Further study may reveal her to be a missing link between other species of Eocene adapiforms, but this hardly solidifies her status as the “eighth wonder of the world”.

Instead, Ida is a remarkably complete specimen that promises to teach us a great deal about the biology of some of the earliest and least human-like of all known primates, the Eocene adapiforms. For this, we can all celebrate her discovery as a real advance for science.

Over the next several years, many more critical articles appeared in scientific and popular magazine articles.

Note once again the *Origin* brochure’s complaint:

Question: Why is each unveiling of a new “missing link” given wide media attention, whereas the removal of that fossil from the “family tree” is hardly mentioned?

Such gross dishonesty! Why does the brochure’s author completely ignore articles critical of the hype about the Ida fossil?

⁴⁵⁴ <https://www.newscientist.com/article/dn17173-why-ida-fossil-is-not-the-missing-link/>

And once again the brochure provides no evidence against the theme of human evolution—only a complaint that scientists and journalists are sometimes wrong, and sometimes improperly hype discoveries.

Textbook Drawings and Models of Ape-Men

This subsection (pp. 27-28) complains that reconstructions of facial features of “so-called ancestors of humans” are completely unreliable. The idea seems to be that this is somehow evidence against human evolution. But all it is really evidence of is that facial reconstructions can be inaccurate. Again no actual evidence against evolutionary theory is presented.

Determining Intelligence By Brain Size

This subsection (p. 28) presents a straw man so misleading that it is an outright lie. The author obviously knows that he is lying. The lie is the strong implication that brain size is the **only** way that biologists use to determine ancestor/descendant relationships.

Fact: The brain size of a presumed ancestor of humans is one of the main ways by which evolutionists determine how closely or distantly the creature is supposed to be related to humans.

Note that the *Origin* brochure’s author admits that brain size is **one of the main ways** for this determination. Yet he goes on as if biologists use **only** brain size.

Here comes the giant straw man:

Question: Is brain size a reliable indicator of intelligence?

Answer: No. One group of researchers who used brain size to speculate which extinct creatures were more closely related to man admitted that in doing so they “often feel on shaky ground.”⁴⁸ Why? Consider the statement made in 2008 in *Scientific American Mind*: “Scientists have failed to find a correlation between absolute or relative brain size and acumen among humans and other animal species. Neither have they been able to discern a parallel between wits and the size or existence of specific regions of the brain, excepting perhaps Broca’s area, which governs speech in people.”⁴⁹

But biologists use all manner of morphological features to determine ancestor/descendant relationships, as shown above in my discussions of cladistics, and the photos beginning on page 193. Brain size is but one.

Having set up his fallacy, the writer springs another—the fallacy of the *loaded question*:

What do you think? Why do scientists line up the fossils used in the “ape-to-man” chain according to brain size when it is known that brain size is not a reliable measure of intelligence? Are they forcing the evidence to fit their theory? And why are researchers constantly debating which fossils should be included in the human “family tree”? Could it be that the fossils they study are just what they appear to be, extinct forms of apes?

The loaded question is in the assumption inherent in the “Why?” Scientists *do not* “line up” fossils according to brain size, but most often according to their *age*. It just so happens that most often, the older the fossil the smaller the brain size.

Until the 1970s biologists commonly thought that humans first evolved larger and larger brains, but a variety of fossil discoveries such as “Lucy” showed that certain changes in skull morphology (position of the foramen magnum, face shape, tooth size, tooth configuration, jaw size, jaw shape, etc.) had appeared long before brain size began to enlarge. Furthermore, fossils showed that upright walking appeared in various hominids along with these changes to the skulls. By the time of Lucy and other

Australopithecines, upright walking was firmly established, such that there existed ape-like creatures that looked much like upright-walking chimpanzees with chimp-size brains from about 4.6 million to 2.5 million years ago. After that, for reasons not understood, brain size enlarged.

Next, the *Origin* brochure invokes obsolete views of the Neanderthals⁴⁵⁵:

What, though, about the humanlike fossils of the so-called Neanderthals, often portrayed as proof that a type of ape-man existed? Researchers are beginning to alter their view of what these actually were. In 2009, Milford H. Wolpoff wrote in the *American Journal of Physical Anthropology* that “Neandertals may have been a true human race.”⁵⁰

While it is true that for many years, Neanderthals were mistakenly viewed as primitive “ape-men”, that view gradually changed beginning in the mid-20th century.⁴⁵⁶ The earliest discovered Neanderthal remains were found in 1829 but not identified as such until 1936.⁴⁵⁷ They are dated to about 35,000 years ago. The type specimen was found in 1856 and consisted of a skullcap along with arm bones and a few other bones. It is now dated to about 40,000 years ago.⁴⁵⁸ The Neanderthal genome project⁴⁵⁹ from the Max Planck Institute in Germany has concluded, beginning in 2010, that modern non-African DNA consists of between 1% and 4% of Neanderthal DNA, and that interbreeding occurred roughly 50,000 years ago. Remains of another ancient human species, the Denisovans,⁴⁶⁰ were first found in Siberia in 2008. A Denisovan jawbone dating to 160,000 years ago was found in Tibet in 1980 and described in 2019.⁴⁶¹ Subsequent DNA analysis has shown that certain East Asian and Australian Aborigine populations have about 3% to 8% of Denisovan DNA, as well as some Neanderthal DNA. It appears that Neanderthals and Denisovans occasionally interbred.⁴⁶²

Today most biologists view modern humans, Neanderthals, and Denisovans as subspecies of *Homo*—*Homo sapiens*, *Homo neanderthalensis*, and *Homo denisova*—derived from a poorly known but highly variable ancestor *Homo heidelbergensis*⁴⁶³ (previously included in the obsolete term “archaic *Homo sapiens*”).⁴⁶⁴ Of course, typical of Watch Tower treatments of human ancestry, the brochure ignores all of the fossil species outside of modern humans and Neanderthals. What about fossils of what are clearly humans of some sort, but completely outside what exists today or exists in the undisputed recent fossil record?

Go back and carefully examine the various specimens of Heidelberg Man in the above photos. Is the Petralona skull human? Yes, but of a sort never seen today. The same is true of all those specimens. How about the Turkana boy? Human or not?

The Watch Tower writer carefully avoids all such questions, even though during the course of his researching for quote-mines, he must have encountered them.

⁴⁵⁵ <https://en.wikipedia.org/wiki/Neanderthal>

⁴⁵⁶ cf. “The Neanderthals”, *Scientific American*, Vol. 241, No. 6 (December 1979), pp. 118-133.

⁴⁵⁷ https://en.wikipedia.org/wiki/Engis_2

⁴⁵⁸ https://en.wikipedia.org/wiki/Neanderthal_1

⁴⁵⁹ https://en.wikipedia.org/wiki/Neanderthal_genome_project

⁴⁶⁰ <https://en.wikipedia.org/wiki/Denisovan>

⁴⁶¹ <https://www.nature.com/articles/d41586-019-01395-0>

⁴⁶² cf. <https://www.youtube.com/watch?v=R1R8yrEGAgw> A sort of tutorial by Svante Pääbo.

<https://www.youtube.com/watch?v=FCzcPSMz1tA> At time 43.47 is a map showing the areas in which it is thought that Neanderthals and Denisovans lived.

<https://www.youtube.com/watch?v=4ySJiteRvka> Many details and maps of habitation.

⁴⁶³ https://en.wikipedia.org/wiki/Homo_heidelbergensis

⁴⁶⁴ <https://biologos.org/articles/the-rise-of-archaic-homo-sapiens/>

https://socialsci.libretexts.org/Bookshelves/Anthropology/Physical_Anthropology/EXPLORATIONS%3A_An_Open_Invitation_to_Biological_Anthropology/11%3A_Archaic_Homo/11.03%3A_New_Page

Given the above information, it is clear that the point the *Origin* brochure tries to make regarding Neanderthals is moot. Neanderthals interbred with modern humans some 50,000 years ago and were therefore of the same species. But that ignores the fact that Neanderthals were different enough from modern humans that most people would recognize them as well outside the norm.

Conclusions

The *Origin* brochure concludes its section on human evolution with this challenge:

Honest observers readily recognize that egos, money, and the need for media attention influence the way that “evidence” for human evolution is presented. Are you willing to put your trust in such evidence?

Given the appallingly bad and dishonest arguments that the brochure has given, it is fair to turn the challenge around:

Honest observers readily recognize that religious egos, religions’ desire for money, and media attention influence the way that criticisms of evolution are presented. Are you willing to put your trust in such evidence?

A Problem Fatal for the Watch Tower Religion

A fatal problem for Watch Tower claims regarding human ancestry is that there is no reasonable way to include all of the fossils classified as varieties of *Homo* among the humans who lived in the period after the supposed Adam and Eve, dated by Watch Tower reckoning as having been created some 6,000 years ago. But the dating problem is even worse, given the reckoning of Noah’s Flood at some 4,400 years ago. If Noah’s Flood were as world-destroying as Watch Tower exposition has long claimed, there would be no human fossils older than 4,400 years. Or allowing that humans originated 6,000 years ago, no human fossil could be older than 6,000 years. Yet we have all manner of human fossils—Neanderthals and anatomically modern humans—going back some 450,000 years. We have human-like fossils, along with a copious archaeological record that includes stone tools, dating as far back as some 2 million years. We have what are clearly transitional fossils going back some 4 million years, and even earlier fossils that seem to be ancestors going back some 5-7 million years.

As an example of these fatal facts, consider the Laetoli footprints⁴⁶⁵ mentioned above, dated to 3.6-3.7 million years ago and preserved in hardened volcanic ash. How have these been dated?

The Laetoli region in Tanzania in Africa has a long history of volcanic eruptions that have repeatedly blanketed the area with ash and lava. The giant volcanic caldera called Ngorongoro Crater⁴⁶⁶ is only some 40 km to the east. This was active from about 2.5 to 2 million years ago and is one of at least five now-inactive volcanoes. The region is full of extinct volcanoes that have been almost completely eroded away. The Serengeti plains and the Ngorongoro region are adjacent wildlife conservation areas. Many distinct layers of ash blanket the region, including the fine ash of the so-called Footprint Tuff that contains the human-like footprints. This tuff is one of the lower layers in the complex, which totals about 150 meters thick.⁴⁶⁷ The complex contains not only the footprints of interest, but many others such as insects, birds, and mammals,⁴⁶⁸ as well as fossils of extant and extinct

⁴⁶⁵ <https://en.wikipedia.org/wiki/Laetoli>
https://www.chnt.at/wp-content/uploads/eBook_CHNT23_Menconero.pdf

⁴⁶⁶ https://en.wikipedia.org/wiki/Ngorongoro_Conservation_Area

⁴⁶⁷ <https://mpace.lib.umanitoba.ca/xmlui/handle/1993/34262>

⁴⁶⁸ <https://pubs.geoscienceworld.org/canmin/article-abstract/46/4/831/126934/CEMENTATION-OF-THE-FOOTPRINT-TUFF-LAETOLI-TANZANIA?redirectedFrom=fulltext>

animals. These include rhinos and gazelles, and the Deinotherium,⁴⁶⁹ a type of elephant that went extinct by about 2 million years ago.

The ash layers of the Footprint Tuff have been radiometrically dated to between 3.85 and 3.6 million years. The fossils contained therein have been cross-correlated with similar dated fossils from other regions in Africa. The ash and lava layers above have been dated to as young as perhaps 10,000 years. So the entire Laetoli volcanic ash complex contains footprints and fossils of all sorts of animals, still-living and extinct, as old as nearly 4 million years.

There is no possible way to reconcile these scientific facts with the Watch Tower Society's chronology that places the origin of humans just 6,000 years ago.

Try to argue, for example, that the huge volcanic region that includes the Ngorongoro Crater and has some 150 meters of ash at Laetoli is less than 4,400 years old. It cannot be done without rejecting geological and paleontological science. Yet the Watch Tower Society admits that radiometric dating of rocks is sufficiently valid for it to argue that young-earth creationist claims of a universe just 6,000 years old are ridiculous because they are unscriptural and scientifically unbelievable (see page 17). Just as unbelievable is a claim that Neanderthals lived less than 4,400 years ago, when they died out some 33,000 years ago.

Watch Tower writers are well aware of such problems: for three decades they have studiously avoided writing about dating methods used in geology, paleontology and archaeology.

Jehovah's Witnesses as a group need to admit that the Watch Tower teachings discussed above are fatal to their religion. Mankind is far older than 6,000 years. Genesis has got the order of creation of life completely wrong. There was no earthwide Flood 4,400 years ago.

⁴⁶⁹ <https://en.wikipedia.org/wiki/Deinotherium>

***Awake!* of March 2014 “The Untold Story of Creation”**

The article considered here appeared in the March, 2014 *Awake!* magazine.⁴⁷⁰ The article describes the view of Jehovah’s Witnesses on what the Genesis account of the “creation of the universe” really means.

The title is pretentious, as if no one else up to this point has tried to tell “the story of creation”. But virtually all who base their beliefs on the Bible have their interpretations of the Genesis story, as shown by the thousands of books written on the subject, and especially by today’s creationist movements epitomized by the websites of Answers in Genesis, the Institute for Creation Research and the Discovery Institute. By “the untold story” the writer really means “the Watch Tower story”.

While the *Awake!* article purports to be written for the general public—after all, it appears in a magazine supposedly written for the general public—it is really written for the Jehovah’s Witness community. This is shown by the non-standard use of various terms that are understood rather differently by the general public than by Jehovah’s Witnesses; uniquely JW jargon is freely used without explanation.

In this paper the term “creationist” is generally used in its basic meaning of “one who believes that a supernatural creator constructed the universe”. There are many sub-beliefs of creationism, such as young-earth, old-earth, deistic, and so forth.

The article opens with a reference to Genesis 1:1:

BILLIONS of people have read or heard what the Bible says about the beginning of the universe. The 3,500-year-old account starts with the well-known statement: “In the beginning God created the heavens and the earth.”

The exact meaning of this passage has been debated for at least two thousand years. Exactly what is included in “the beginning”? The beginning of “the heavens and the earth”? What might be included in that? What is observable from the earth by the naked eye? That which is observable with modern telescopes?

Many people, however, are unaware of the fact that Christendom’s leaders,

A bit of JW jargon here: “Christendom” is a pejorative term that means “all non-JW religions that *merely claim* to be Christian”, whereas to the general public it means “the part of the world in which Christianity prevails” or “Christianity as a whole”. This pejorative term automatically biases the JW audience against what *Awake!* claims these “leaders” have said.

including so-called creationists and fundamentalists,

Another bit of JW jargon by the use of “creationists” and “fundamentalists”. The general meaning of “creationist” was mentioned above. However, when Watch Tower publications use the term, they generally mean “*young-earth* creationist” and usually give the impression that “young-earth creationist” is the *only* meaning of the term. The general meaning of “fundamentalist” is “someone who believes in strict and literal adherence to a set of basic religious principles”. As such, Jehovah’s Witnesses are certainly religious fundamentalists. There are, of course, many varieties of fundamentalists: Christian, Jewish, Islamic, Hindu, and so forth. The writer’s goal here is to distance the Watch Tower Society from association with the unchristian “leaders” of “Christendom” who are “creationists and fundamentalists”.

⁴⁷⁰ www.jw.org/en/publications/magazines/g201403/untold-story-of-creation/

In many contexts in Western literature the capitalized term “Fundamentalist” has come to mean “someone who adheres to the Christian principles outlined in *The Fundamentals*”. That collection of books, published in 1910, has come to be the standard of modern Evangelical Christianity. So in this sense, a “Fundamentalist” is essentially an “Evangelical Christian”. Of course, many writers are sloppy and fail to distinguish between the capitalized and uncapitalized meanings of the words, as well as their shades of meaning. This sloppiness certainly describes some Watch Tower publications, except that in some cases the lack of precision is clearly deliberate.

That Watch Tower writers really do know the difference between “fundamentalist” and “Fundamentalist” is shown by their own writings. Here is an example of the term used with its general meaning:

A fundamentalist is one who holds rigidly to traditional, conservative religious values.⁴⁷¹

Here is an example of the term used with its specific meaning of “Evangelical Christian”:

Fundamentalism, while claiming to defend the Bible, has also actually undermined its authority. One way it has done so is by a literal interpretation of texts that are clearly not meant to be taken literally. An example of this is the claim that, according to the Genesis account, the earth was created in 6 literal 24-hour days. Obviously, these were symbolic days of much longer duration. (Compare Genesis 2:3, 4; 2 Peter 3:8.) Other ways Fundamentalism undermines the Bible is by teaching unscriptural doctrines, such as eternal torment in hellfire, and at times by promoting standards of conduct other than those required by Scripture, such as forbidding the consumption of alcoholic beverages or the use of makeup by women. In these ways Fundamentalism has caused people to reject the Bible’s message as naïve, unreasonable, and unscientific.⁴⁷²

As a side point, *Awake!* here complains that Fundamentalists interpret literally “texts that are clearly not meant to be taken literally.” But how does one know which texts are to be taken literally and which are not? Biblical literalists take almost all texts literally, except when a literal interpretation results in rank nonsense. Others interpret many texts, such as parts of Genesis, as mythology or as stories meant to teach a lesson rather than as strictly historical narrative. Still others apply the “common sense” of the modern world to texts, interpreting those that are clearly at odds with common sense or science as figurative, but those that are basically in line with common sense and science as literal. Yet others, like the Watch Tower Society, have developed their own traditions about whether certain texts are literal or figurative.

Here is an example where the Watch Tower writer distinguishes Jehovah’s Witnesses from “Fundamentalists”—as if this had to be explained to anyone who knows anything about Jehovah’s Witnesses:

Jehovah’s Witnesses are Christians, but they are not Protestants for the same reason that they are not Catholics—they recognize certain teachings of those religions as unscriptural. For example, the Bible does not teach that God—the very personification of love—tortures people forever in a fiery hell. Nor does it teach that humans have an immortal soul or that Christians should meddle in politics.—Ezekiel 18:4; John 15:19; 17:14; Romans 6:23.

“Fundamentalism is a broad movement within Protestantism in the United States,” says The World Book Encyclopedia. Some Fundamentalist organizations “have adopted social and political positions based on a literal use of Biblical texts.” That definition does not fit Jehovah’s Witnesses. As mentioned, they abstain from politics and do not impose their views on others by political or any other means. Rather, they converse with people, usually one-on-one, using reason and convincing evidence, in imitation of the early Christians.—Acts 19:8. (*Awake!* August 2010, p. 6)

⁴⁷¹ *The Watchtower*, March 1, 1997, p. 3.

⁴⁷² *Awake!*, October 22, 1989, pp. 19-20.

The reader can consult the March 1, 1997 *Watchtower* magazine, pages 3-6, to see how the writer sloppily fails to distinguish between “fundamentalist” and “Fundamentalist”, even though he explicitly purports to discuss the differences in meanings in actual usage.

Another side point: the author of the above claims that JWs “are not Protestants for the same reason that they are not Catholics.” This is just plain stupid, because Catholics nominally give allegiance to the Catholic Church and its pope, whereas there is no Protestant Church. Rather, there are tens of thousands of Christian sects that, by general consent, are viewed as “Protestants” by virtue of the fact that they are not Catholics and not members of the Orthodox churches.⁴⁷³ The Adventism of the 19th century was certainly a branch of Protestantism, and Jehovah’s Witnesses are rooted in Adventism.

Back to the article:

... have spun the Bible account of creation into numerous tales that deviate from what the Bible really says. These interpretations fly in the face of scientific fact.

These statements are breathtaking in their hypocrisy.

First, there are very good arguments that indicate that when Genesis speaks of “six creative days” it really does mean six literal 24-hour days. The reader can consult the voluminous young-earth creationist literature to see this. Watch Tower publications never present actual arguments against such literalism—they merely *declare* that such literalism is wrong.

Second, from its inception in the 1880s until the mid-1980s, the Watch Tower Society taught that the creative days were 7,000 years long, and it teaches that today we are about 6,000 years into the 7th creative day (God’s day of rest). So the Genesis account of the creation of plant life on land on the 3rd day begins about 34,000 years ago. And when Genesis describes the first creation of animal life in the oceans and flying life on land on the 5th day, that began some 20,000 years ago. And when Genesis describes the first creation of animal life on land on the 6th day, that began a mere 13,000 years ago. Yet modern science indicates that microscopic plant life has existed for at least 3.5 billion years, and macroscopic plant and animal life for more than 600 million years. So until the mid-1980s the Watch Tower Society taught its own version of young-earth creationism—not the same version as Christian Fundamentalists teach, but perhaps better called young-life creationism. The fact that Watch Tower publications for decades have allowed that the earth itself—but not life upon it—might be billions of years old does not mitigate the Society’s belief in its unique version of young-earth creationism.

Today it is not clear that the Watch Tower itself knows what it believes about the time of appearance of life. The last mention of 7,000-year creative days in Watch Tower literature was in 1987.⁴⁷⁴ Beginning in the mid-1980s some Watch Tower publications substituted “millennia” or “long periods of time” for “7,000 years”, and that is what they do today. But that is entirely unhelpful for a reader who wants to know if the Watch Tower Society accepts modern scientific dating methods—which one would think is a goal of this *Awake!* article.

Even though those tales are not found in the Bible, they have caused some people to dismiss the Bible account as mythical allegory,

Based on that, readers of Watch Tower literature up through the mid-1980s would have had equal cause to dismiss the Bible account as myth.

The real Bible story of creation has gone largely unnoticed. This is a shame, for the Bible actually presents a very logical and credible explanation of the beginning of the universe. What is more, that explanation

⁴⁷³ <https://en.wikipedia.org/wiki/Protestantism>

⁴⁷⁴ *The Watchtower*, January 1, 1987, p. 30.

harmonizes with scientific discovery. Yes, you might be pleasantly surprised by the Bible's untold story of creation!

Actually, a careful comparison of the Genesis account with scientific dating of the various events that happened in the earth's history shows that they do not match at all, as shown below.

We will skip the section "THE UNCREATED CREATOR" and continue with:

HOW LONG DID GOD TAKE TO CREATE THE UNIVERSE?

The Bible states that God created "the heavens and the earth." This broad statement, however, makes no reference to the length of time involved in creating the universe or to the methods he used to shape it. What about the widespread creationist belief that God created the universe in six literal 24-hour days? This concept, widely rejected by scientists, is based on a gross misunderstanding of the Bible account.

Actually, it is based on a literal interpretation of the Bible account. The only reason that the Watch Tower Society rejects that literal interpretation is that—giving credit where credit is due—the Society recognizes that the scientific evidence for an earth billions of years old is so strong that only those with an unreasoning commitment to literal Biblical interpretation fail to see it. The founder of the modern young-earth creationist movement, Henry Morris, once wrote that if it were not for his commitment to a literal interpretation of Genesis, he would have no problem accepting the scientific evidence for an old earth. So the Watch Tower's rejection of a literal interpretation of the creative days of Genesis is based on scientific evidence, not on the Bible itself.

Consider what the Bible really says.

The Bible does not support fundamentalists and creationists who claim that the creative days were literal 24-hour days.

No evidence, or even argumentation, is given. By the same token, the Bible does not support JW-style young-earth creationism that pegs the creative days as 7,000 years long.

The Bible frequently uses the term "day" to designate various periods of time. In some cases these periods are of an unspecified length. The account of creation found in the Bible book of Genesis is one example of this.

Again no evidence or argumentation is given. This claim is based on rationalization due to the scientific evidence for an earth 4.6 billion years old.

In the Bible account, each of the six creative days could have lasted for thousands of years.

Note the waffling on the actual length of the creative days. According to science, these "days" must have lasted hundreds of millions of years. After all, the latest evidence is that multi-celled life began proliferating at least 600 million years ago and probably has existed for at least a billion years. And there is evidence that one-celled life was in existence at least 3.5 billion years ago. About 540 million years ago, the period in earth's history called the Cambrian Period came along, during which, in a period of perhaps 30 million years, many new and relatively large plants and animals arose in the oceans, especially those with hard parts that fossilized more easily.

To refer to hundreds of millions of years as "thousands of years" or "millennia" is like referring to a human life span as "thousands of seconds long"—true, but completely misleading. Someone who does that is either abysmally ignorant or deceptive.

Why does the Watch Tower Society carefully avoid allowing that the "creative days" were hundreds of millions of years long? Obviously because of its history of teaching that they were only 7,000 years long. Today there are millions of JWs who for decades were taught that this was so, and many of them still believe it. On the other hand, because the Watch Tower Society has not mentioned these 7,000-year

periods since 1987, hardly any JW's who are "younger in the Truth" than about 45 years are aware of the older teaching. By using the unspecific term "millennia" the Society kills two birds with one stone: it avoids creating cognitive dissonance, both in the younger JW's who know very well that life has been on the earth for hundreds of millions of years, and in the older JW's who, in some recess of their minds, still believe that life is no more than 34,000 years old.

God had already created the universe, including a lifeless planet Earth, by the time the first creative day began.

This claim is refuted by the Bible itself. While an argument can be made that Genesis 1:1 ("In the beginning God created the heavens and the earth."), **in isolation**, might allow for the earth to have been created long before the creative days began, there is no textual reason why that must be so. Genesis 1:2-5 follows immediately with "Now the earth proved to be formless and waste ... there came to be light ... a first day." So the text might allow that "in the beginning" took place long before "there came to be light", but it also allows that the one followed *immediately* after the other. How can one resolve the ambiguity? The Bible itself proves conclusive.

Exodus 20:11 clearly states: "For in six days Jehovah made *the heavens and the earth*, the sea and everything that is in them." (also see Exodus 31:17) Are the sun, moon, and stars part of "everything that is in" the heavens? Obviously, yes. Therefore, "in the beginning" encompasses the beginning of the first creative day, and *Awake!*'s claim is spurious. See page 145 for more on this.

Furthermore, *Awake!* provides no scientific evidence whatsoever that there was a gap between "in the beginning" and Day One.

Awake! continues with a non sequitur:

Evidently the six creative days were long periods during which Jehovah God prepared the earth for human habitation.

This is followed by a demonstrably false and misleading claim:

The Bible account of creation does not conflict with scientific conclusions about the age of the universe.

The claim is misleading because, in view of the above demonstration that the Watch Tower Society has given no actual evidence that the Bible allows for an earth billions of years old and that its claims do not contradict the Bible, the Bible's account has not been demonstrated to be compatible with scientific conclusions about the age of the universe. After all, if Day One began some 48,000 years ago, and as Exodus 20:11 explicitly states, "the beginning" occurred in that time frame, there is a huge conflict between the Bible and science (see page 145 for a more detailed discussion). The claim is also misleading because most of Genesis 1 concerns the creation of life and things having to do with the earth itself—not the universe. Indeed, Genesis itself gives no evidence of its writers' awareness of a universe outside the earth. And it is false because a careful consideration of the order of creation events listed in Genesis shows that it is completely at odds with science, as shown below.

For example, Genesis states that grass and fruit trees were created on the 3rd creative day, before any animal life. That is at odds with the scientific fact that both plant and animal life appeared in the seas long before *any* kind of life appeared on the land. Naturally, the Jews reading Genesis long ago would have understood "fruit trees" to include the kind they were familiar with, such as olives, dates and pomegranates. But such flowering plants do not show up in the fossil record until about 120 million years ago, whereas the first animal life on land appeared about 400 million years ago in the form of insects, about 365 million years ago in the form of amphibians, and the first multi-celled life in the sea appeared nearly 600 million years ago.

Awake! next tackles the question, “DID GOD USE EVOLUTION?” This is a topic of conversation among many Christians today.

Many who do not believe in the Bible embrace the theory that living things emerged from lifeless chemicals through unknown and mindless processes. Supposedly, at some point a bacteria-like, self-replicating organism arose, gradually branching out into all the species that exist today. This would imply that ultimately the mind-bogglingly complex human actually evolved from bacteria.

While the above statements are true in isolation, they are misleading because, as is usual in Watch Tower publications, they implicitly lump the question of the origin of life (abiogenesis) with the theory of evolution, which does not include abiogenesis. This is shown by *Awake!*'s next statement:

The theory of evolution is also embraced by many who claim to accept the Bible as the word of God. They believe that God produced the first burst of life on earth but then simply monitored, and perhaps steered, the process of evolution. That, however, is not what the Bible says.

That last statement is technically true, but again entirely misleading because *the Bible says nothing at all* about the exact means by which God created the various forms of life. After all, if, as some Christians argue, God steered the process of evolution, then he is still the Creator. And if God built the universe such that the evolution of life was inevitable, then he is still the Creator (see the section on theistic evolution on page 312). These things are believed by many prominent scientists who are also Christians. This includes Michael Behe, a member of the Discovery Institute, who *Awake!* has been fond of quoting to “refute” evolution but who accepts a God-driven version of it.

The reader will note that *Awake!* provides no evidence or argumentation for its claim.

According to the Bible, Jehovah God created all the basic kinds of plant and animal life, as well as a perfect man and woman who were capable of self-awareness, love, wisdom, and justice.

If God used evolution to create all the basic kinds, how does this conflict with the Bible? *Awake!* does not say.

The kinds of animals and plants created by God have obviously undergone changes and have produced variations within the kinds. In many cases, the resulting life-forms are remarkably different from one another.

That, of course, is evolution. Although Watch Tower writers never acknowledge this fact, and are probably only dimly aware of it, their argumentation over the years in defense of the reality of Noah's Flood depends entirely on massive and extremely rapid evolution after the Flood (see page 318 for a lot more on this). Even assuming that the Genesis account of the Flood is true, if hundreds of “kinds” of animals survived on Noah's ark, they could hardly have given rise to the millions of species that exist today. If, as Watch Tower writers have argued, only a few hundred “kinds” were needed to propagate all of today's species, then those “kinds” must have radiated into today's millions of species in only a few thousand years—which is thousands of times more rapid than anything observed in the fossil record or that scientists propose. And a careful consideration of Genesis' chronological statements, interpreted in light of Watch Tower teaching, shows that all that radiation must have occurred in at most a couple of hundred years (see page 318).

An example of this rapid evolution is the frog “kind”, which includes what are commonly called frogs and toads. There are some 4,800 species of these today. They are at least as different from one another as mammals are from one another, not only morphologically but genetically. To imagine that 4,800 species evolved from one or a few “frog kinds” in under 4,400 years is beyond the pale. It would be like imagining that man, bears, whales, and mice all began evolving from just one “mammal kind”

in the year that the Watch Tower Society claims Noah's Flood ended, 2369 BCE. Yet that is what the Society implicitly teaches, even though its writers are apparently too ignorant to know it.

The Bible account of creation does not conflict with the scientific observation that variations occur within a kind.

That depends on what one means by "the Bible account of creation". If one means the fairy-tale version espoused by *Awake!*'s writer, then perhaps so. If one goes by what the Bible actually says, there is a huge conflict.

A CREATOR PERCEIVED IN CREATION

In the mid-1800's, British biologist Alfred Russel Wallace agreed with Charles Darwin on the theory of evolution by natural selection. But even this renowned evolutionist is said to have stated: "For those who have eyes to see and minds accustomed to reflect, in the minutest cells, in the blood, in the whole earth, and throughout the stellar universe ... there is intelligent and conscious direction; in a word, there is Mind."

So Wallace believed that God directed evolution. It's astonishing that *Awake!*'s writer fails to see how self-defeating this quotation is to his overall claims.

Almost two thousand years before Wallace, the Bible had already observed: "For [God's] invisible qualities are clearly seen from the world's creation onward, because they are perceived by the things made, even his eternal power and Godship." (Romans 1:20) From time to time, you might want to take a moment to reflect on the marvelous complexities found in nature—from a single blade of grass to the countless heavenly bodies. By examining creation you can perceive the Creator.

This is the old "divine watchmaker" idea, also called the "design requires a designer" argument made popular in the late 18th century by William Paley. This has been variously described as "the argument from personal incredulity", "the argument from ignorance" and "the argument from lack of imagination"—all of which are informal logical fallacies called "appeals to ignorance".

Next, *Awake!* treads on ground extremely dangerous for Christians who dare to think too closely on the matter. This ground is often called "theodicy" or "the problem of evil or suffering":

'But if there is a loving God who created all things,' you may ask, 'why would he permit suffering? Has he abandoned his earthly creation? What does the future hold?' The Bible contains many other untold stories—truths that have been buried under human ideas and religious agendas and, therefore, hidden from most people. The publishers of this magazine, Jehovah's Witnesses, would be happy to help you examine unadulterated Bible truth and learn more about the Creator and the future of his human creation.

Watch Tower writers have not fared well when, on rare occasions, they have tackled theodicy. The problem can be seen by considering the fossil record of animal life. Today we see predators and prey, and most people instinctively understand that from the prey's point of view, predation is an evil because it causes suffering. Predation is clearly observed in the fossil record at least as far back as the Cambrian period of 541 to 485 million years ago. Why would a loving God create a world in which the suffering caused by predation is fundamental to its structure? Young-earth creationists are acutely aware of this problem and use it to justify their teaching that "sin and death entered the world" only after Adam and Eve sinned in the Garden of Eden, which helps rationalize their belief that the universe was created in only six literal days.

The Watch Tower Society tried to tackle this question in the October 8, 1982 and January 8, 1983 *Awake!* magazines. Suffice to say that the problem was not solved, and the discussion actually raised more questions than it answered, in view of the ridiculously bad rationalizations given. For example, the October 8 issue tried to explain what happened after Adam and Eve sinned (p. 11):

... as man turned toward lawlessness, the earthly creation, too, became chaotic. Man lost his loving dominion over the animals. Since humans could not control themselves peacefully, it is no surprise that the animals are in the same condition... The animals ... began to live off one another.

But this contradicts what we find in the fossil record—that animals have lived off one another for hundreds of millions of years. And how does *Awake!*'s rationalization explain behaviors and structures clearly designed for predation: the poison and teeth/fangs of snakes, spiders, and lizards; the webs of spiders; the instinctive, not learned, predatory behavior of snakes, spiders, scorpions, etc.; the teeth of cats, dogs, and many other animals, extant and in the fossil record, that are clearly designed for cutting flesh; the fact that the digestive systems of cats are clearly designed to eat meat and not vegetables, and that cats are physically unable to synthesize the essential amino acid taurine but must obtain it from the flesh of the animals they consume; the defensive abilities of various prey animals; the fact that almost all frogs are exclusively carnivorous and most have tongues designed specifically to catch prey; the fact that many animals have lures designed to attract prey (like the frogfish); that mantis shrimp have claws that act as unbelievably powerful battering rams specifically designed to kill or stun prey; the existence of all manner of parasites, from viruses and bacteria to tapeworms, which cannot live outside of their host animals; the fact that the fossil record displays “arms races” between many varieties of predators and prey, races that occurred time after time after time?

Readers who know something about science and the history of life will be amused at the way certain readers handed the Watch Tower writers their heads in the January 8, 1983 *Awake!* article. The Society's response—it's amazing that it actually published that material, but it learned its lesson, as it never tackled the problem again—included this gem:

We did not claim that certain features evolved by adaptation, but that existing features were put to a different use from what was originally purposed. We do not believe it is possible to establish for a certainty how things were in the distant past by observing the present. Conditions have changed... As for the many predators being suited for the chase and the kill, what about humans? They have shown an extremely efficient talent for attacking and killing their fellowman. Does that argue for humans' being designed that way from the beginning? Admittedly, we cannot answer all questions that arise in this matter from what we can observe today, and the account in the Bible is quite brief. Yet, we believe that humankind and animal kind were originally designed to live at peace with one another and to get their nourishment from vegetation. That original purpose will be restored during the Messianic Kingdom. We will have to wait and see how those prophecies are fulfilled.

Clearly, the writer of this March 2014 *Awake!* knows to steer clear of the problem that the claim that “design requires a designer” leads directly to the “problem of evil”.

Finally *Awake!* gets down to the nitty gritty and presents “THE TIME LINE OF CREATION”. Unfortunately for his argument, the writer fails to give any evidence whatsoever that this timeline corresponds with scientific findings. Why? Because he obviously knows that it does not. All that the writer presents is the Watch Tower's current understanding of Genesis (see page 145 for much more on this).

THE BEGINNING

The material heavens and earth are created.—Genesis 1:1.

Again, this separation of “the beginning” from Day One is contradicted by Exodus 20:11 and 31:17. As for placing the creation of the physical matter of the universe before all other events, well, it is trivially obvious that that must be so.

DARKNESS

The earth is formless, desolate, and dark.—Genesis 1:2.

Exactly when in the scientific timeline is this condition realized? The latest scientific timeline is that the earth and the rest of the solar system formed some 4.56 billion years ago from a cloud of gas and dust, probably triggered by a nearby supernova. Within about 50 million years the earth had coalesced into a molten ball of rock and iron, had been struck by a Mars-sized planet and spun off a lot of material that soon coalesced into the Moon, and had accumulated a lot of water from bombardment by comets. Eventually the surface cooled sufficiently to allow liquid water to accumulate. The composition of the atmosphere was quite different from today's. Whether the surface was dark is unknown because the composition of the atmosphere is unknown, except that it contained no appreciable amount of oxygen. Exactly what "desolate" and "formless" mean scientifically is unclear.

FIRST DAY

Diffused light evidently penetrates the earth's atmosphere. If there had been any observer on the surface of the earth, the sources of light would have been imperceptible to him. Yet, the difference between night and day became discernible.—Genesis 1:3-5.

How does the writer know these things? By Watch Tower tradition. That tradition, going back some 140 years, is not based on science but on after-the-fact rationalization that these things must be so for the Genesis account to make any sense at all. Again no evidence is presented. But the fact is that the earth coalesced from the parent gas/dust cloud *after* the sun coalesced and began emitting light, so there was never a time when the earth did not receive sunlight.

SECOND DAY

The earth is covered with water and a dense mantle of vapor. These two elements are separated, creating a gap between the watery surface and the canopy of vapor. The Bible describes this space as "an expanse between the waters," and calls it "Heaven."—Genesis 1:6-8.

More Watch Tower tradition that conflicts with science. There is no evidence for a massive "vapor canopy" containing sufficient water to flood the entire planet during Noah's Flood (see page 11 for a thorough debunking). Indeed, young-earth creationists have tackled this claim many times to defend it, but have been forced by the facts of physics to conclude that any "vapor canopy" that might conceivably be physically possible could only contain enough water to flood the earth with a few millimeters of water. Think "atmospheric pressure" to understand why.

Furthermore, the word translated "expanse" does not mean what the Watch Tower Society claims (see page 128 for more). The Hebrew word "raqia" can certainly be translated as "expanse", but then the question is: in what way is the thing described expanded or spread out? Bible dictionaries indicate that the word and related words refer to something "beaten out flat" like a shield of bronze. In other words, the expansiveness is two-dimensional, like a giant metallic pizza pie spread out over the earth from horizon to horizon. This is shown by the Watch Tower's own Bible, *The New World Translation*, where in the original version Genesis 1:20 speaks of flying creatures flying "over the earth **upon the face** [lit., "across, on the face of, in front of"] of the expanse of the heavens". So there is no indication in the Bible that "raqia" means the atmosphere. What it clearly means is the blue expanse of apparently solid sky as seen from the earth's surface. And of course, no evidence is given by *Awake!*'s author, because the claim is nothing more than Watch Tower tradition.

THIRD DAY

Surface water subsides and dry ground appears. The atmosphere clears up to allow more sunlight to reach the ground. Some vegetation appears, with new species sprouting through the third and subsequent creative days.—Genesis 1:9-13.

Again we see after-the-fact rationalization of the text based on Watch Tower tradition. However, the order of appearance of land vegetation with respect to other forms of life is extremely problematic because it contradicts the fossil record. According to that record, multi-cellular plant and animal life appeared in the oceans in Precambrian times at least 600 million years ago. It was another 200 million years, in the mid-Silurian period, when land plants first appeared. And it was not until the mid-Cretaceous period, some 120 million years ago, that flowering plants such as fruit trees and grasses appeared. Yet Genesis 1:11-13 has grass, fruit trees and all manner of land vegetation appearing before any animal life in the ocean. The order of “creation” presented by Genesis is simply wrong.

FOURTH DAY

The sun and moon become discernible from the earth’s surface.—Genesis 1:14-19.

Again no evidence is presented.

FIFTH DAY

God creates underwater creatures and flying creatures in great numbers with the ability to procreate within their kinds.—Genesis 1:20-23.

Again Genesis is out of sync with the fossil record. Underwater creatures appeared at least 600 million years ago—not 20,000 years—and they appeared long before land vegetation. The first flying creatures were insects. They first appear in the Carboniferous fossil record of about 350 million years ago, and probably originated much earlier in the Devonian period some 400 million years ago. Birds as such appear in the fossil record somewhere between 200 and 130 million years ago, depending on how one defines “bird”. Yet Genesis 1:21 explicitly states that God then created “**every** winged flying creature”, which obviously included all those known to the Jews who wrote Genesis.

SIXTH DAY

Land animals are created, both large and small. The sixth day culminates with a masterpiece of God’s physical creation: the first human couple.—Genesis 1:24-31.

Yet again Genesis does not comport with the fossil record. The first land animals, amphibians, appear in the fossil record some 365 million years ago, long before the birds that Genesis says were created first. As for humans, the Watch Tower Society’s chronology puts their creation about 6,000 years ago, but records of history, archaeology, and paleontology show that humans in recognizable form have existed for about 2 million years, their human-like ancestors existed since at least 5-6 million years ago, humans with relatively modern culture have existed for at least 300,000 years, the archaeological record goes back at least 50,000 years depending on the measuring stick, and written historical records go back at least 5,000 years—long before the Watch Tower’s date for Noah’s Flood of 2370 BCE. Indeed, well-documented historical records put the construction of the Pyramids at Gizeh between about 2670 and 2460 BCE. Obviously, Egyptian civilization must go back many hundreds, if not thousands, of years before that.

In conclusion, the *Awake!* article by no means accomplishes what the writer would like. It misses the mark by a wide margin. What the article really does is confirm what one author wrote 45 years ago:⁴⁷⁵

A long acquaintance with the literature of the Witnesses leads one to the conclusion that they live in the intellectual ‘twilight zone.’ That is, most of their members, even their leaders, are not well educated and not very intelligent. Whenever their literature strays onto the fields of philosophy, academic theology, science or any severe mental discipline their ideas at best mirror popular misconceptions, at worst they are completely nonsensical.

⁴⁷⁵ *Millions Now Living Will Never Die: A Study of Jehovah’s Witnesses*, Alan Rogerson, Constable, London, 1969, p. 116.

Awake! Deliberately Misquotes Biologist Rama Singh

The January, 2015 *Awake!* had the cover subject “How Did Life Begin?” On page 3 it began with the following:

How would you complete the following sentence?

LIFE IS THE RESULT OF ...

A. EVOLUTION

B. CREATION

SOME might assume that a scientifically-minded person would pick “evolution” and that a religious person would pick “creation.”

But not always.

Rama Singh, professor of biology at Canada’s McMaster University, says: “The opposition to evolution goes beyond religious fundamentalism and includes a great many people from educated sections of the population.”

The fact is, many educated people—including a number of scientists—question the validity of the theory.

Consider Gerard, a professor of entomology who was taught evolution at college. “When I took tests,” he says, “I would give the professors the answers they wanted—but I did not believe it.”

Why is it that even some scientifically-minded people have trouble accepting evolution as the origin of life? To answer that, consider two questions that baffle many researchers: (1) How did life get its start? and (2) How did living things develop?

But in the later bound volume and in the *jw.org* online version, the bolded portion was removed, so now this reads:

How would you complete the following sentence?

LIFE IS THE RESULT OF ...

A. EVOLUTION

B. CREATION

SOME might assume that a scientifically-minded person would pick “evolution” and that a religious person would pick “creation.”

But not always.

The fact is, many educated people—including a number of scientists—question the validity of the theory.

Consider Gerard, a professor of entomology who was taught evolution at college. “When I took tests,” he says, “I would give the professors the answers they wanted—but I did not believe it.”

Why is it that even some scientifically-minded people have trouble accepting evolution as the origin of life? To answer that, consider two questions that baffle many researchers: (1) How did life get its start? and (2) How did living things develop?

Why was the quotation from Singh removed?

Because it misrepresents Singh’s views, and Singh called out the Society on it. After being notified by several people of the misrepresentation, Singh wrote a letter to *Awake!*’s editor and demanded both that it be corrected and that *Awake!* publish an apology. Obviously a correction was made, but an apology was never published.

The quote from Singh gives the impression that he, as an “educated person” and a scientist, might harbor some opposition to the theory of evolution, that he might question “the validity of the theory”, and that he is justifying why some merely “assume that a scientifically-minded person would pick ‘evolution’ and that a religious person would pick ‘creation.’”

Here is what one online commentator quoted from Singh’s letter to the *Awake!* editor:⁴⁷⁶

I have received inquiries from many evolutionists, atheists and former members of your organization (ex-JW) who brought the above misquotation to my attention. I agree with them that your misquotation of my work is deliberate and meant to convince your followers in the truth of creationism by perpetuating false support from scientists.

So I am asking you first to remove the misquotation from your article immediately and second print an unconditional apology for what I consider is a deliberate damaging action on your part to my reputation.

If I may suggest, as an organization you should stop wasting your time in perpetuating lies against evolution.

Singh’s letter to *Awake!* was reproduced on an online forum,⁴⁷⁷ and reads, in part:

Editor of Awake (Magazine)
Jehovah’s Witnesses

Dear Editor,

I am writing to protest your Awake Magazine article, “The origin of life – five questions worth asking”, dated January, 2015”, in which you have misquoted me by taking half a sentence out of context from my article on evolution. Contrary to what you imply, I do not support a creationist view, nor do I suggest that even a minority of scientists support such a view. Anyone who reads my article can see that I fully support the theory of evolution (Singh 2011).

In my article, I follow the paragraph from which you have misquoted me with material showing why the facts of evolution are hard to comprehend for many people. My article is meant for people who want to understand evolution but who do not have the expertise to do so, not for creationists like you who oppose evolution on religious grounds.

Your misquotation amounts to intellectual dishonesty and reflects on your character and dignity as editor as well as a man of God. I can understand that you do not accept evolution as an explanation for the biodiversity on this planet, but I cannot understand why you would knowingly misuse a scientist’s work to make him appear supporting the creationist point of view.

I have received inquiries from many evolutionists, atheists and former members of your organization (ex-JW) who brought the above misquotation to my attention. I agree with them that your misquotation of my work is deliberate and meant to convince your followers in the truth of creationism by perpetuating false support from scientists.

So I am asking you first to remove the misquotation from your article immediately and second print an unconditional apology for what I consider is a deliberate damaging action on your part to my reputation.

The goal of religion is to seek truth, to remove ignorance and fear, not to perpetuate myths and lies. As a man of religion you may have the need for God and as a man of science I may not. But we both should be on the same side when it comes to the pursuit of truth. Believers need truth as much as non-believers do.

If I may suggest, as an organization you should stop wasting your time in perpetuating lies against evolution. Religion and science need each other. As Einstein remarked, religion is lame without science, and science is blind without religion. Religion and science are both driven by reason but they operate in different domains. Religion seeks absolute truth, science proceeds through incremental steps. Religion is the reason to keep science marching...

⁴⁷⁶ <https://www.inquisitr.com/1766536/biology-professor-creationist-magazine/>

⁴⁷⁷ <https://www.jehovahs-witness.com/topic/228710001/jw-org-does-partial-u-turn-over-awake-magazine-rama-singh-misquote?page=2>

Rama Singh made some good commentary on this affair:

<https://www.thespec.com/opinion-story/5474687-religion-science-driven-by-reason/>

On various online forums discussion of this affair can be found:

<http://friendlyatheist.patheos.com/2015/04/20/controversial-quotation-quietly-removed-from-jehovahs-witnesses-publication-without-apology-or-retraction/>

<https://www.jehovahs-witness.com/topic/286780/awake-january-2015-how-did-life-begin-more-misquotes>

<http://jwsurvey.org/cedars-blog/jw-org-does-partial-u-turn-over-awake-magazine-rama-singh-misquote>

Rama Singh's article was published online on September 23, 2011, and was titled "Darwin's legacy: why biology is not physics, or why evolution has not become a common sense".⁴⁷⁸ The article clearly supported evolution, and its purpose was to explain why many people do not accept it. The reasons, Singh says, boil down to simple ignorance and/or religious training.

The Abstract states:

Cosmology and evolution together have enabled us to look deep into the past and comprehend evolution—from the big bang to the cosmos, from molecules to humans. Here, I compare the nature of theories in biology and physics and ask why physical theories get accepted by the public without necessarily comprehending them but biological theories do not. Darwin's theory of natural selection, utterly simple in its premises but profound in its consequences, is not accepted widely. Organized religions, and creationists in particular, have been the major critic of evolution, but not all opposition to evolution comes from organized religions. A great many people, between evolutionary biologists on one hand and creationists on the other, many academics included, who may not be logically opposed to evolution nevertheless do not accept it. This is because the process of and the evidence for evolution are invisible to a nonspecialist, or the theory may look too simple to explain complex traits to some, or because people compare evolution against God and find evolutionary explanations threatening to their beliefs. Considering how evolution affects our lives, including health and the environment to give just two examples, a basic course in evolution should become a required component of all our college and university educational systems.

Singh further states:

In this essay I first make some preliminary remarks about similarity between evolutionary biology and cosmology and then I treat the main question: why evolution has not become a common sense? I do not dwell on what evolution is (Mayr 2001) or on why evolution is true (Coyne 2009)—two of the most thoroughly dealt questions in response to challenges from the creationists. I argue that although evolution by means of natural selection is unassailable logically, it is not easy to understand mechanistically by the uninitiated. I also provide some criticism of how evolution is taught in schools and colleges. This essay is mainly intended for the general masses between evolutionary biologists on one hand and creationists on the other, i.e., noncreationist, humanists, social scientists, and others who are not logically opposed to evolution, and who are genuinely interested in serious dialogues between science and religion but do not have the background to understand the subtleties of evolution...

Theories in physics and biology, such as the theory of relativity and evolution, are not equally received—either by the scientific community or by the general public. One explanation is that the theory of relativity does not challenge our position in the universe but the theory of evolution does. More than that, physical theories of matter, space, and time can be harnessed technically for our benefit, which indirectly reinforces belief in their truth regardless of whether or not we comprehend them. Acceptance of ideas about evolution, on the other hand, has been controversial from the very beginning. Many remain uncomfortable with the idea of evolution and some, especially in the United States, continue to believe in special creation, especially of humans. The opposition to evolution from creationists is understandable, but they are not the only ones. A less appreciated

⁴⁷⁸ html: <http://www.nrcresearchpress.com/doi/full/10.1139/g11-046#.VLa0gXuo3Vo>
pdf: <http://www.nrcresearchpress.com/doi/pdf/10.1139/g11-046>

fact is that a significant proportion of scientists, especially from the physical and medical sciences, also do not believe in evolution. This cannot be simply blamed on their lack of exposure to facts of evolution or for not having taken a course in evolution. Even among biologists it is not uncommon to find some successful scientists who may not, or one time did not, believe in evolution. The disagreement about evolution runs in different shades—from the origin of life to origin of humans, origin of consciousness and existence of a “soul”.

The question naturally arises: why is it that after 150 years, Darwin’s theory is still not widely accepted by the general public? The question is important as one cannot imagine a simpler theory with so profound consequences. The basic tenets of the theory are simple and clear. Evolution requires that (i) there be phenotypic differences among individuals in different traits, (ii) that alternative forms of the phenotypes must have differences in their survival and reproduction (as a result of competition), and (iii) that the phenotypic differences between individuals must have a genetic basis, i.e., they must be transmissible from one generation to next. In addition, some random changes will occur from time to time as a result of population dynamics that may retard adaptation or even at times may produce new lines of innovation.

Any system, living or nonliving, that fulfills these three criteria would evolve and change over time. My favorite example is the evolution of cars. Cars have evolved and become better because car companies fulfill the three criteria for evolution to take place. Makes of cars are like a species and cars are like individuals within a species...

And yet evolution should be easy to understand. Evolution is a logical necessity that is bound to occur if you have things that reproduce with errors. ...

Here is the context of the offending quotation that appeared in *Awake!*:

Why evolution has not become a common sense

The opposition to evolution goes beyond religious fundamentalism and includes a great many people from educated sections of the population, including biologists, nonbiologists, and the lay public. This essay will focus on the lack of belief in evolution in this latter group; opposition from religious fundamentalism has been covered in many places (Kitcher 1982; Futuyma 1983; Montagu 1984; Young 1985; Gould 1999; Dawkins 2006; Coyne 2009). There are several reasons why facts of evolution are not easily comprehensible by the general masses.

First, evolution is invisible to nonspecialists. A typical person is not exposed to the diversity of life and adaptations as very few of us are as well traveled as evolutionists like Charles Darwin, Alfred Russel Wallace, and Charles Lyell were in their time. Darwin and Wallace came up with the theory of evolution by natural selection from their observations on organisms in different habitats and from richness of species diversity and varied adaptations over space and climatic conditions. As an undergraduate student of biology in India, I did not believe there could be hundreds of species in a particular genus until I came to North America and saw that none of the plants and animals that I had seen in India were here. But travel can open our eyes only if we are willing to see...

Second, there is misunderstanding about the role of mutation and selection. As it is true that most mutations are deleterious and get eliminated, the opponents of evolution go further and argue that as mutations are random, they cannot produce functional proteins, intricate cellular apparatus, and developmental complexity. They are either being ingenuous or simply do not understand that mutations alone do not produce evolutionary change and that although mutations are random, selection is not. Subject to constraint from population fluctuation (effect of drift), under natural selection you get what you expect; fitnesses do not lie...

The power of natural selection remains badly unappreciated. The acceptance of evolution is limited by the perception that natural selection does not have the power to create complex organs like the vertebrate eye (but see, Dawkins 1996), or that it does not have the power to create new species but only trivial variation among populations within species. Darwin devoted two chapters of his book and much time trying to bring together the results of vast amounts of artificial selection experiments with crop plants and domestic animals to bear by analogy on the power of natural selection in evolution. The invisible hand of gradual evolution keeps ticking and over geological time produces immense diversity as a result of accumulated changes within and between taxa.

Third, there is a lack of appreciation for the sense of deep time, on the geological time scale. For the common public it is hard to appreciate the immensity of the geologic time and its importance in evolution...

Fourth, a problem in accepting evolution is the role of environment. Environmental change is one-half of any story about evolution, but nothing is more misunderstood than the meaning of the environment (Lewontin 2000) ...

An additional problem is that as biologists we have not done a good job of communicating the importance, the inevitability, and the ubiquity of evolution. A student once told me that she lost interest in evolution as it was thrown on her time and again from high school on, but no one ever helped her see the connection between the forces of evolutionary change and the evolution of complex phenotypes like the vertebrate eye.

Most students will never take more than one course on evolution. The problem of communicating mechanisms and dynamics of evolution is further complicated by the basic facts of population genetics... evolution is expected to be a slow process. Put it all together and present them to a student of evolution and you have the challenge of your lifetime to make them really understand how evolution works within the time frame of a 3 unit course. **I do not think the fact that they do not believe has anything to do with these theoretical points; it comes from prior preconceptions and religious world view.** After 30 years of teaching evolution I feel most students who take evolution courses may marvel the facts of evolution (fossils and all), they do not develop a true appreciation for the mechanisms of evolution, i.e., how evolution can be gradual and still produce profound change over time.

As biologists we must share some of the responsibility for the fact that evolution is not widely understood or accepted. During the 1940s scientists from various disciplines, such as population genetics, paleontology, and systematics, got together and forged an Evolutionary Synthesis taking into account all the known facts of evolution at that time. But check out any text book written following the Synthesis and you will find them full with principles of population genetics theory but lacking in biological details. The forces of evolution (mutation, selection, drift, and migration) are all explained there but what needs to be explained, evolutionary dynamics of complex phenotypes, is often missing...

Modern text books have of course changed and improved, and the major facts of evolution (fossils, phylogeny, biodiversity, and developmental complexity) are presented before teaching the theory of population genetics as it should be. Serious interest in evolution can only come from learning about the facts of evolution, not from the theory of gene frequencies. Biologists like the late Stephen J. Gould nurtured a whole new generation of evolutionary biologists by writing about the facts of evolution for the general readership. Knowledge of evolution is required for a good understanding of all aspects of our life—from the functioning of our body and brain to our relationship with our fellow human beings and the environment around us.

Clearly, then, *Awake!* has grossly and deliberately misrepresented the words of biologist Rama Singh.

Once again, let's revisit David Splane's claims regarding this practice of deliberate misrepresentation:

Splane 3:33: "[Very often a writer will supply two or three pages of photocopies before and/or after a quote of interest.] In that way, our researchers can examine the quote in context, to make sure that what we're seeing in print is really what the author of the quote had in mind."

Splane 4:02: "For example, an evolutionist might make a statement which, on the surface, appears as to confirm his support of creation. Or perhaps an atheist will make a statement that seems to indicate that he believes in God. But when you examine the quote in context, you realize that that isn't what the author had in mind at all. We would never *deliberately* distort a quotation. We try very hard to use all of our quotations in context."

A question for David Splane: Have Watch Tower Writers been brought up to date on the November, 2017 JW Broadcasting video? Have they been given a good verbal hiding for how they misrepresented Rama Singh?

A couple of other observations on this January, 2015 *Awake!*, which says:

Consider Gerard, a professor of entomology who was taught evolution at college. “When I took tests,” he says, “I would give the professors the answers they wanted—but I did not believe it.”

The problem here is that “Gerard” is actually one Gerard Hertel—a Jehovah’s Witness. Quoting him on evolution in this way is of no more value than quoting Billy Graham on the scriptural validity of the Trinity doctrine. Hiding Gerard’s JW identity from readers is thoroughly dishonest, because the quote gives the impression that he is an impartial scientist and does not accept evolution for scientific rather than religious reasons. In fact, he *cannot* be impartial, because if he voiced any agreement with evolution, he would be disfellowshipped for apostasy.

Also note the standard dishonest Watch Tower practice of conflating evolution and abiogenesis:

Why is it that even some scientifically-minded people have trouble accepting evolution as the origin of life? To answer that, consider two questions that baffle many researchers: (1) How did life get its start? and (2) How did living things develop?

Once again, the Theory of Evolution has nothing to say about the origin of life. This subject is separate and is called Abiogenesis.

End of Examples of Inaccuracy Section

The above material clearly shows that Watch Tower claims of being scrupulous about accuracy in its literature do not match its practice. The examples given are only a small fraction of what might be set forth. Below are some online resources that show many more examples.

<https://critiquesonthewatchtower.org/>

<http://jwfacts.com/>

<https://ad1914.com/>

<http://kristenfrihet.se/english/epage.htm>

<https://jeffro77.wordpress.com/>

http://www.jwstudies.com/jehovah_s_witnesses.html

Bad Arguments Plus Inaccuracy

In the next sections I present a small sample of bad arguments given in Watch Tower literature. These arguments are almost always accompanied by inaccurate information, misquotes, misrepresentations, quote-mining, unstated assumptions, fallacious arguments, and just about every scholastic sin imaginable.

Misrepresentation of Radiometric Dating

Radiometric dating (radioactive dating) to date various materials has been in use since the early 20th century, and was especially refined after World War II. Among the best-known techniques are radiocarbon dating, potassium-argon dating, and uranium-lead dating.⁴⁷⁹ Other dating techniques include thermoluminescence dating.⁴⁸⁰ Scientists and historians who understand the strengths and limitations of these techniques view them as generally accurate. As with any other scientific techniques, the limitations must be taken into account when assessing the accuracy of results. Naturally, laymen who have little or no actual knowledge or experience with the science have little credibility in assessing the accuracy of such dating methods.

There are any number of good resources by which one can educate oneself about radiometric dating⁴⁸¹ and other methods. Many are highly technical, while others explain some of the techniques in a manner suitable for non-scientist and religious audiences.⁴⁸² Internet search engines bring up hundreds of resources.

Young-earth creationists have been especially eager to discredit radiometric dating because it invalidates their claim that God created the universe and the earth some 6,000 years ago. But their ‘scientific’ objections are entirely based on odd anomalies or misapplications of the techniques that have cropped up from time to time. Virtually all of their examples of why radiometric dating is invalid have been resolved by scientists.⁴⁸³

Until about 1990, the Watch Tower Society followed in the footsteps of young-earth creationists⁴⁸⁴ and regularly produced material trying to debunk the accuracy of radiometric dating.⁴⁸⁵ Since then it has said almost nothing, but when it has, it has always been to show the accuracy of some biblical historical material. Strangely, even though it accepted the radiometric date for the age of the earth, it discounted all such dates for life on the earth because of its doctrine of 7,000-year creative days.

Looking at the Society’s material on radiometric dating up through 1990, we find the usual repertoire of bad arguments—bad because they grossly misrepresented the science and its results. The usual style of argument was to present a few examples where the method gave bad results (all of which

⁴⁷⁹ https://en.wikipedia.org/wiki/Radiometric_dating

⁴⁸⁰ [https://en.wikipedia.org/wiki/Thermoluminescence_dating#:~:text=Thermoluminescence%20dating%20\(TL\)%20is%20the%20exposed%20to%20sunlight%20\(sediments\)](https://en.wikipedia.org/wiki/Thermoluminescence_dating#:~:text=Thermoluminescence%20dating%20(TL)%20is%20the%20exposed%20to%20sunlight%20(sediments)).

⁴⁸¹ cf. *The Age of the Earth*, G. Brent Dalrymple, Stanford University Press, 1991

<https://www.asa3.org/ASA/resources/Wiens.html> <http://www.talkorigins.org/faqs/faq-age-of-earth.html>
<http://www.rationalskepticism.org/creationism/radionuclide-dating-is-rigorous-t1783.html>

⁴⁸² cf. “Hominids Lived Millions of Years Ago, but How Can We Tell?” <https://www.youtube.com/watch?v=tAnklVuKDE>

⁴⁸³ cf. <http://www.talkorigins.org/faqs/hovind/howgood.html>

⁴⁸⁴ cf. “Carbon dating doesn’t work -- debunked” <https://www.youtube.com/watch?v=QbvMB57evy4>

⁴⁸⁵ This was often done in connection with supporting the notion of 7,000-year creative days, and often to support the claim that Adam was created in 4026 BCE.

had previously appeared in the scientific literature), usually borrowing from young-earth creationists, then to present quotations where scientists spoke about limitations of the methods as if these limitations invalidate the entire enterprise,⁴⁸⁶ and to end with something like, “we don’t care what science says because we believe the Bible!”⁴⁸⁷ And of course, “we believe the Bible” really means “we believe our traditions and interpretations of the Bible.”

The result was that the Society allowed that the earth could be the 4.6 billion years old as indicated by various dating methods, and that various rocks might be hundreds of millions of years old, but disallowed that any animal life at all might be older than the 20,000 years indicated by its 7,000-year-creative-day teaching.⁴⁸⁸

Various Watch Tower publications showed off the gross incompetence and dishonesty of its writers in writing about radiometric dating and paleontology. For example, the February 8, 1990 *Awake!* (pp. 9-11) had an article “What Happened to the Dinosaurs?” which under the subtitle “The Dating of Dinosaurs” described and discounted radiocarbon dating, as if that method was employed to date dinosaur fossils. But that method is never used by dinosaur paleontologists, because it is good for at most perhaps 40,000 years, whereas the dinosaurs died out 66 million years ago. Whether this gross mistake was due to simple incompetence, or to the writer’s deliberate attempt to mislead readers, is not clear, but it is typical of most Watch Tower writing on the subject.⁴⁸⁹

One of the mainstays of the Society’s arguments against radiocarbon dating was that the vapor canopy above the expanse before Noah’s Flood must have blocked out cosmic rays from the sun, thus lowering pre-Flood production of C-14 in the upper atmosphere and invalidating radiocarbon dating for all pre-Flood material.⁴⁹⁰ But as I showed on page 11, there never was such a canopy, so arguments based on a vapor canopy were invalid.

Those arguments were not even self-consistent, because the Society argued on the one hand that all pre-Flood artifacts had to have been destroyed by the incredible violence of the Flood (see page 89), but on the other hand that the great number of artifacts dated by archaeologists to before the Flood (2370 BCE) should have been dated later because the vapor canopy reduced pre-Flood C-14, thus making such artifacts appear older than they actually were. That’s what you get when you stupidly mash two incompatible arguments together.

The fact is that radiometric dating is very reliable—not perfect, but pretty good. Most importantly, the various methods are cross-checked against other methods, and if there are any discrepancies these are carefully resolved. For example, for decades radiocarbon dating has undergone extensive cross checking against tree-ring dating (dendrochronology), counting varves (annual layers) in lakes and carbon dating organic remains at various levels, checking against layers in ice cores from Greenland and the Antarctic, etc. Today there exist charts showing how raw carbon dates must be corrected to calendar dates to account for the calibrated variations. Carbon dates back to about 10,000 years old are considered accurate to within a few hundred years.

Here are some online resources just a few minutes of search engine work brought up:

Radiometric Dating Does Work! <https://ncse.com/library-resource/radiometric-dating-does-work>

⁴⁸⁶ cf. *Awake!*, September 22, 1986, pp. 21-26

⁴⁸⁷ cf. *Awake!*, September 22, 1986, p. 27

⁴⁸⁸ cf. *Awake!*, September 22, 1986, pp. 17-21

⁴⁸⁹ cf. <https://www.youtube.com/watch?v=hAQyVbW3tOM>

⁴⁹⁰ cf. *Awake!*, April 8, 1972, p. 10

Research Shows Radiometric Dating Still Reliable <https://www.nist.gov/news-events/news/2010/09/research-shows-radiometric-dating-still-reliable-again>

Radionuclide Dating Is Rigorous <http://www.rationalskepticism.org/creationism/radionuclide-dating-is-rigorous-t1783.html>

Radiometric Dating is Flawed!! Really?? How Old IS the Earth? <https://www.youtube.com/watch?v=iGDrq8rikJc>

Radiocarbon Calibration <https://c14.arch.ox.ac.uk/calibration.html>

Calibration of radiocarbon dates https://en.wikipedia.org/wiki/Calibration_of_radiocarbon_dates

Radiocarbon Tree-Ring Calibration <https://www.radiocarbon.com/tree-ring-calibration.htm>

Atmospheric Radiocarbon Calibration to 45,000 yr B.P.: Late Glacial Fluctuations and Cosmogenic Isotope Production Abstract ONLY <http://science.sciencemag.org/content/279/5354/1187>

Lake Suigetsu https://en.wikipedia.org/wiki/Lake_Suigetsu

Lake Suigetsu and the 60,000 Year Varve Chronology <https://thenaturalhistorian.com/2012/11/12/varves-chronology-suigetsu-c14-radiocarbon-callibration-creationism/>

Lake Varves <http://www.accuracyingenesis.com/varves.html>

Young-earth creationists claim that radiocarbon dating has been invalidated by their RATE project⁴⁹¹ by finding C-14 in diamonds and coal and so forth, but all of the project's findings have been invalidated by proper scientists. For example, the project had samples of diamond and coal tested by several standard radiochronology labs, which found ages of roughly 40-80,000 years, when the ages should have been infinite. By manipulating various numbers, the YECs decided that the 40,000-year figures should actually have been about 5,000 years, thus validating their belief in a 6,000-year-old universe and 4,400-year-old Flood. Proper scientists, however, have found that diamonds, having been formed deep in the earth, contain trace amounts of uranium, which decays to radioactive thorium. The uranium-thorium sequence emits subatomic particles during the decay, which transforms trace amounts of nitrogen to carbon-14, thus throwing off the C-14 dating technique when applied inappropriately. Scientists have also investigated the coal anomalies, and found that most coal deposits are surrounded by rock that contains trace amounts of uranium, again leading to the production of C-14 in the coal.⁴⁹²

Given all the above evidence, there is no reason for any reasonable person to doubt the validity of radiometric dating or to conclude that the universe, the earth and life upon it are only a few thousand years old. In particular, radiocarbon dates for archaeological material are quite reliable, because many of them are the result of cross-checking among several independent dating methods.

⁴⁹¹ https://en.wikipedia.org/wiki/RATE_project

⁴⁹² <http://www.talkorigins.org/faqs/c14.html>

Misrepresentation of Human History

Human History In North Africa and the Near East

Human history can focus on different fields: written, archaeological, paleontological, biological, etc. General history does not focus on humans and includes the geological, cosmological, etc. History written by writers with no religious viewpoint is usually termed secular; that written by those with sectarian viewpoints is usually termed religious. In this paper I use the word history in a way that is to be understood from the context.

According to the Watch Tower Society, there is no human history prior to 4026 BCE, the date it assigns to the creation of Adam in the Garden of Eden. Actually, from the Society's viewpoint there should be no evidence of human history prior to 2370 BCE, the date of Noah's Flood, because all traces of humans were wiped out in the violent cataclysm of the Flood. The Society speculates that histories were written by pre-Flood people and passed on through Noah to the ancient patriarchs like Abraham and Moses.⁴⁹³

Beginning on page 318 I give many examples of archaeological sites from far earlier than 2370 BCE. These well-dated human remains prove that the Watch Tower Society's "Bible history" based on its claimed "Bible chronology" is wishful thinking.

The Society has always claimed that whenever secular history disagrees with its view of history, secular history is wrong. This is because the Society has two main goals: (1) to uphold its traditional and often literal interpretation of various Bible narratives; (2) to uphold its "1914 chronology". The reason for (1) is obvious, since the JW religion is largely Fundamentalist: if the Bible is not historically accurate, it is not God's Word. The reason for (2) is that the second most fundamental doctrine of Jehovah's Witnesses is based on its 1914 chronology, namely, that the spiritual authority of the Governing Body of Jehovah's Witnesses was given to it by God in 1919, which in turn rests on a speculative and complicated set of "prophetic interpretations" of certain Bible passages that the Watch Tower Society claims began to be fulfilled in 1914.

Throughout this paper I've given examples of how the Society runs afoul of (1) by making dishonest arguments. In various sections below I'll give a summary of how the Society, in the same dishonest way, runs afoul of (2).

According to all manner of paleontological discoveries, the history of distinctly humanlike ancestors goes back about 5-7 million years, and human history goes back around 2 million years. The figure depends on what ancient creatures are assigned as 'human'.⁴⁹⁴ Human or humanlike footprints have been found in volcanic ash turned to stone and dated to 3.6-3.7 million years old.⁴⁹⁵ The details become more complex with every passing year as more discoveries are made. The oldest creatures with recognizably modern skeletons are designated *Homo erectus* and similar species.⁴⁹⁶ The famous

⁴⁹³ *Insight*, Vol. 1, "Genesis, Book of", p. 919; Vol. 2, "Writing", p. 1212; *The Watchtower*, August 1, 1963, p. 459, December 15, p. 741, March 15, 1960, p. 165, June 1, 1959, p. 326, October 1, 1959, p. 588, July 15, 1958, p. 429, 432, February 1, 1953, p. 78, November 1, 1952, p. 646, September 1, 1950, p. 297.

⁴⁹⁴ https://en.wikipedia.org/wiki/Human_evolution

⁴⁹⁵ <https://en.wikipedia.org/wiki/Laetoli> <https://www.youtube.com/watch?v=w1Lu4VggDH0>
<https://www.youtube.com/watch?v=3bFtotU0of4>

⁴⁹⁶ <http://humanorigins.si.edu/evidence/human-fossils/species/homo-erectus> https://en.wikipedia.org/wiki/Homo_erectus
<https://www.nature.com/scitable/knowledge/library/homo-erectus-a-bigger-smarter-97879043>

Nariokotome or Turkana Boy skeleton, discovered in 1984 near Lake Turkana in Kenya,⁴⁹⁷ shows how, from a non-specialist's viewpoint, the skeleton is virtually indistinguishable from that of a modern human, whereas the skull shape and size are well outside the normal range. *Homo erectus* seems to have been quite variable in its skeletal features, especially skull shape and size, which has led to a good deal of confusion among scientists who analyze these fossils. Apparently populations of *Homo erectus* migrated out of Africa at various times and populated much of Asia and Europe, leaving all manner of stone tools, campsite remains, and artifacts. All of this evidence, having accumulated over some two million years, conclusively disproves a global "Noah's Flood" a few thousand years ago.⁴⁹⁸

Older still is *Homo habilis*,⁴⁹⁹ but paleontologists argue about what fossil remains ought to be in that designation because skeletal remains are so few, and are so intermediate in form between *Homo erectus* and the yet older and more ape-like Australopithecines⁵⁰⁰ that it is difficult to categorize them as human or not.⁵⁰¹ Australopithecines are clearly intermediate in structure between what I will call earlier apes (although that is a poor term, given the abundance of ancient ape-like fossils) and later ape-like creatures. They have features characteristic of both 'pure apes' and humans, such as pelvises and legs built for upright walking,⁵⁰² yet skulls with braincases no bigger than those of modern chimpanzees. One of the most striking features of these fossils is that, when they are arranged in sequence, from those that look the most ape-like to those that look the most human-like, their ages determined by radiometric and other forms of dating generally fall in line with the obvious sequence.⁵⁰³ This has been demonstrated by certain scientists who gave some young-earth creationists a pile of skulls and had them arrange the skulls in order from most to least primitive. The arrangement came quite close to the sequence most accepted by paleontologists. The latest arrangement by paleontologists is given in a video by the American Museum of Natural History.⁵⁰⁴

The January 2019 *Scientific American* magazine⁵⁰⁵ contains an article on why exercise is necessary for human health. The author describes the differences between the need for exercise in humans (they need a lot of it to be healthy) and in apes like chimpanzees, gorillas and orangutans (they get away with a lot less). He summarizes what is known today about apparent human ancestors in terms of their walking and climbing ability, and compares them with the abilities of apes. The fossils show a clear evolution in the ability to walk upright. The earliest forms, about 4-7 million years old, show various adaptations for upright walking but retain an ape-like grasping big toe. The author writes (p. 26):

Each of these early hominins is distinct from any of the living apes in the anatomical details of their cranium, teeth and skeleton. Nevertheless, aside from walking on two legs, it appears these species lived a very ape-like existence. Their molars were similar in size and sharpness to chimpanzees, with somewhat thicker enamel, suggesting a mixed diet of fruit and other plant foods. *Ardipithecus*, found in 4.4-million-year-old deposits in Ethiopia and by far the best known early hominin, had long arms, long, curved fingers and grasping feet, indicative of a life spent partly in the trees. New biomechanical analyses ... show that *Ardipithecus* had evolved changes in its pelvic anatomy to permit fully upright, energetically efficient walking without compromising the ability to power itself into the canopy. Our early ancestors were clearly comfortable in two worlds, on the ground and in the trees.

⁴⁹⁷ https://en.wikipedia.org/wiki/Turkana_Boy

⁴⁹⁸ How Anthropology Disproves Noah's Flood <https://www.youtube.com/watch?v=BitwnxiPH34>

⁴⁹⁹ <http://humanorigins.si.edu/evidence/human-fossils/species/homo-habilis> https://en.wikipedia.org/wiki/Homo_habilis

⁵⁰⁰ <https://en.wikipedia.org/wiki/Australopithecus>

⁵⁰¹ <https://www.youtube.com/watch?v=jdrk2sEN1qI>

⁵⁰² <https://www.youtube.com/watch?v=WLtYa06RLmo>

⁵⁰³ https://en.wikipedia.org/wiki/List_of_human_evolution_fossils

⁵⁰⁴ <https://www.youtube.com/watch?v=DZv8VyIQ7YU>

⁵⁰⁵ *Scientific American*, January 2019, "Evolved to Exercise: Why humans—unlike our ape cousins—must stay active to be healthy", Herman Pontzer, pp. 22-29.

From about four million to two million years ago the hominin record is dominated by the genus *Australopithecus*, with at least five species recognized today, including the famous “Lucy” and her kin. Anatomical changes in the lower limb point to improved walking ability and more time on the ground compared with earlier species. The grasping foot is gone in *Australopithecus*, the big toe in line with the others, and the legs are longer, the same ratio of leg length to body mass that we see in living humans. Analysis of the pelvis by Kozma, together with recent work on the fossilized footprints from Laetoli in Tanzania, indicate that this creature had an effectively modern gait. Long arms and fingers tell us these hominins were still regularly in the trees to forage and perhaps to sleep. Analyses of the wear patterns on their teeth suggest *Australopithecus* species primarily ate plant foods, just as the earliest hominins did before them and living apes do today. Based on their large, thick-enameled molars, *Australopithecus* diets most likely leaned more on harder and more fibrous foods, particularly when preferred foods were not available...

Some two million years ago the telltale signs of curious or clever hominins experimenting with new ideas and approaches began to emerge. In 2015 Sonia Harmand of Stony Brook University and her team recovered large, unwieldy stone tools, some weighing more than 30 pounds, from 3.3-million-year-old sediments on the western shore of Lake Turkana in Kenya. In the past 15 years excavations at 3.6-million-year-old sites in both Ethiopia and Kenya have found stone tools associated with fossilized animal bones bearing the unmistakable gouges and scrapes of butchery. By 1.8 million years ago cut-marked bones and stone tools were the norm, and it was not just the sick and injured animals that fell prey to these hominins. Analyses of butchered bones at Olduvai Gorge in Tanzania show that prime-aged ungulates were targeted. Just as important, unlike every hominin before, by 1.8 million years ago hominins had expanded outside of Africa into Eurasia, from the foothills of the Caucasus Mountains to the rain forests of Indonesia. Our predecessors had jumped the ecological fence and were capable of thriving nearly anywhere.

Accompanying the SA article (p. 27) is a picture comparing the full skeletons of *Ardipithecus*, *Australopithecus afarensis*, *Homo Erectus* and a chimpanzee. The differences in pelvic and leg structures from the hominins to the chimpanzee are striking. The fact that these structures in the earliest hominins are intermediate in form between apes and later hominins (i.e., they were upright walkers but had grasping big toes; arms and hands show clearly that they were tree climbers), and that they show a clear evolution in structure through time (6-7 million to 1.8 million years ago), proves conclusively that there really were transitional fossils between apes and humans. Although the term is outmoded, “missing link” jumps to mind.

The last SA quote above speaks about stone tools. One of the most striking series of discoveries in connection with human history is sets of stone tools, usually called “stone tool industries” by paleontologists.⁵⁰⁶ These correspond fairly well to the fossil discoveries in the sense that the more technically primitive the stone tools look, the older they tend to be. Paleontologists have classified these sets of tools into several categories based on their sophistication. The oldest and most primitive looking tools are generally just chunks of rock with pieces chipped off to create sharp edges. It’s sometimes arguable whether a supposed tool is just a natural stone or is artificially worked. The youngest and least primitive looking tools are clearly worked pieces of flint, chert, obsidian, etc. They’ve been formed into choppers, axes, knives, arrowheads, spearheads, etc. See below for more.

Based on discoveries of skeletons, tools and other artifacts, humans and their close relatives (*hominins*) are known to have inhabited Africa for 4 to 7 million years, depending on how the earliest specimens are classified, and unequivocally modern humans have been in the Nile region for hundreds of thousands of years. The likely earliest recognizably human predecessor of modern humans, *Homo erectus*,⁵⁰⁷ lived in Africa from about 1.8 million years to 40-100,000 years ago. Later likely human

⁵⁰⁶ <https://www.britannica.com/topic/stone-tool-industry>

⁵⁰⁷ https://en.wikipedia.org/wiki/Homo_erectus

ancestors, generally lumped into the catchall category ‘archaic *Homo sapiens*’⁵⁰⁸ or ‘archaic humans’,⁵⁰⁹ such as *Homo heidelbergensis*, lived roughly 700,000 to 300,000 years ago.⁵¹⁰ Still later are the Neanderthals⁵¹¹ (~600-700,000 to 25-40,000) and Denisovans⁵¹² (timeline possibly like the Neanderthals). Modern humans interbred with both, with some 1% to 3% of the DNA of modern non-Africans deriving from Neanderthals⁵¹³ and some 3% to 6% of the DNA of some Asians, Melanesians, Aboriginal Australians and Papuans deriving from Denisovans. “Anatomically modern humans”, or *Homo sapiens*, have lived in Africa for some 300,000 years.⁵¹⁴

There are a number of stone tool industries:⁵¹⁵ pre-Oldowan (Lomekwi)⁵¹⁶, Oldowan,⁵¹⁷ Achuelean,⁵¹⁸ Levallois-Mousterian,⁵¹⁹ Aurignacian⁵²⁰ and Microlithic.⁵²¹ Naturally there are all manner of variations within these designations. The important point for our purposes is that these industries are strongly associated with general categories of humans, and the dates for the tool assemblages closely follow the dates for the associated humans. In other words, the Acheulian tool industry is usually associated with *Homo erectus*, both in location and in time. Additionally, artwork is sometimes found along with the tools or the campsites in which tools were made. For example, the [Venus of Hohle Fels](#) from a cave in Germany, made of mammoth ivory, is about 35-40,000 years old and is associated with Aurignacian tools. The tools and art have been found worldwide.

The above information shows that humans of various sorts have lived in Europe, Asia, Africa and the Near East for a very long time.⁵²² Since modern humans first appeared in northwest Africa some 300,000 years ago,⁵²³ they’ve lived all over north Africa and the Near East, including the Nile valley. At times, climate was relatively wet and the Sahara region supported plenty of animals and humans. Rivers ran with sufficient flow to carve all of the usual landforms associated with river systems, including deep valleys, entrenched meanders, dendritic drainage patterns covering large land areas, etc.⁵²⁴ Egypt had its share of these,⁵²⁵ and it’s almost self-evident that Egypt’s modern super-arid climate does not provide sufficient water to carve all these landforms. In particular, such landforms are not formed by one or a handful of large floods, but by long erosion in a wet climate.

Between 5,000-11,000 years ago North Africa was wet enough to support lots of animals and humans. People drew art on rock faces, such as animals and people swimming.⁵²⁶ The climate cycles

⁵⁰⁸ <https://www.nature.com/scitable/knowledge/library/archaic-homo-sapiens-103852137>

⁵⁰⁹ https://en.wikipedia.org/wiki/Archaic_humans

⁵¹⁰ https://en.wikipedia.org/wiki/Homo_heidelbergensis

⁵¹¹ <https://en.wikipedia.org/wiki/Neanderthal>

⁵¹² <https://en.wikipedia.org/wiki/Denisovan>

⁵¹³ <https://www.npr.org/sections/health-shots/2017/10/05/555592707/neanderthal-genes-help-shape-how-many-modern-humans-look>

⁵¹⁴ <http://humanorigins.si.edu/evidence/human-fossils/species/homo-sapiens> https://en.wikipedia.org/wiki/Homo_sapiens

⁵¹⁵ https://en.wikipedia.org/wiki/Stone_tool

⁵¹⁶ <https://en.wikipedia.org/wiki/Lomekwi>

⁵¹⁷ <https://en.wikipedia.org/wiki/Oldowan>

⁵¹⁸ <https://en.wikipedia.org/wiki/Acheulean>

⁵¹⁹ https://en.wikipedia.org/wiki/Levallois_technique <https://en.wikipedia.org/wiki/Mousterian>

⁵²⁰ <https://en.wikipedia.org/wiki/Aurignacian>

⁵²¹ <https://en.wikipedia.org/wiki/Microlith> <http://www.stoneagetools.co.uk/microliths.htm>

⁵²² cf. <https://www.theguardian.com/science/2013/oct/17/skull-homo-erectus-human-evolution>

⁵²³ <https://www.theatlantic.com/science/archive/2017/06/the-oldest-known-human-fossils-have-been-found-in-an-unusual-place/529452/>

⁵²⁴ <http://skywalker.cochise.edu/wellert/Google-geology/Africa-rivers/index.htm>

⁵²⁵ <http://skywalker.cochise.edu/wellert/Google-geology/Africa-rivers/egypt.htm>

⁵²⁶ <https://www.nature.com/scitable/knowledge/library/green-sahara-african-humid-periods-paced-by-82884405>

are driven by changes in the earth's orbit,⁵²⁷ the same cycles that drive the ice ages with timescales from tens to hundreds of thousands of years. Humans of some sort have lived in the Nile Valley for at least 700,000 years⁵²⁸ and probably much longer, because *Homo erectus* first appeared in Africa and migrated to the Near East and the rest of Asia at various times thereafter. Many stone tools of the Acheulean type have been found scattered on the desert surfaces of Egypt, especially the characteristic handaxes.⁵²⁹

By about 250,000 years ago the newer Levallois and Mousterian tool industries were appearing in the Nile Valley, in the Middle Palaeolithic period (~250 to ~50 Ka (=thousand years ago)). These are often associated with Neanderthals in Europe and the Near East, although the more widespread modern *Homo sapiens* at that time were also using newer and better tool technologies.⁵³⁰ Remains of butchered animals of all sizes, from hares, porcupines and wild cats, to gazelle, buffalo, rhinoceros and giraffe have been found at such tool sites. Some cave sites contain the remains of hearths used over long periods of time. A number mining sites of intensive extraction of chert nodules from Nile River terraces have been found, indicating a relatively large population. Many graves have been found; the oldest so far is the grave of a modern human child dated to ~55 Ka,⁵³¹ with a fairly intact skeleton. Several cemeteries have been found. One, dated at 12,000 years ago, contained the skeletons of 59 individuals, many of whom had suffered violent deaths as indicated by chert arrowpoints embedded in some bones and skulls and cut marks on some bones.⁵³²

The Middle Paleolithic gave way to the Upper Paleolithic (~50 to ~24 Ka). By this time the Levallois technique was no longer being used.⁵³³ Chert for the tools was being intensively mined. Various Nile Valley campsites contain remains of toolmaking, hunting and fishing activities. The toolmaking sites often contain the base chunk of rock from which many smaller tools were chipped off. Sometimes these chunks are surrounded by the detritus of knapping, and clearly show the order in which tools were chipped off.

Next came the Late Paleolithic (~21 to 12 Ka).⁵³⁴ Remains of human activities in the Nile Valley are relatively sparse, mainly because sea level in the Mediterranean was on the order of 100 meters lower than today because the glacial maximum had tied up so much water in the continental ice sheets, and when the sea and river rose at the end of the ice age maximum (from ~11 to ~7 Ka), the valley was filled in with alluvial deposits that covered much of the remains of human activity. The sites that have been found indicate that hunting and fishing were major activities.

In view of all this physical evidence, it is evident that human history, and human history in Egypt, are far older than the Watch Tower Society would like.⁵³⁵ Not only is there massive evidence for basic human activities, but for cultural activities as well. A variety of relatively modern cultures have been in the Nile Valley for at least 40,000 years.⁵³⁶ Their activities include building homes, tombs and religious buildings, carving primitive symbols on stone, and the entire gamut of what people do. Some of the symbols are clearly the precursors of hieroglyphic writing. Records of events were kept as well, which

⁵²⁷ https://en.wikipedia.org/wiki/North_African_climate_cycles

⁵²⁸ <http://visav.phys.uvic.ca/~babul/AstroCourses/P303/WebContent/egyptian.html>

⁵²⁹ *The Oxford History of Ancient Egypt*, Ian Shaw, ed., Oxford University Press, 2000, pp. 18, 20.

⁵³⁰ Shaw 2000, pp. 18-24.

⁵³¹ Shaw 2000, p. 25.

⁵³² Shaw 2000, pp. 29-30.

⁵³³ Shaw 2000, pp. 24-25.

⁵³⁴ Shaw 2000, pp. 25-31.

⁵³⁵ For an old-earth creationist point of view, see <https://www.youtube.com/watch?v=tlAnklVuKDE>

⁵³⁶ https://en.wikipedia.org/wiki/Prehistoric_Egypt

allowed the development of an early lunar calendar. This ultimately allowed the Egyptians to develop their 365-day calendar which was used for some 3,000 years. This obviously required meticulous record keeping, since the calendar was accurate to $\frac{1}{4}$ day per year.⁵³⁷ The development of Egyptian civilization with a *written* history comprises only the very latest bit of Nile Valley habitation, beginning about 3150 BCE.⁵³⁸

Of course, all of this evidence of continuity of culture proves that there was no such thing as Noah's Flood. There is no break in Egyptian history, or any other cultural history, anywhere in the world some 4,400 years ago.

Egyptian History

As shown above, while the written history of Egypt goes back to about 3150 BCE,⁵³⁹ its cultural history goes back tens of thousands of years, its archaeological history goes back hundreds of thousands of years and its paleontological history in terms of human inhabitants goes back more than two million years. Obviously its geological history goes as far back as northeastern Africa has existed, hundreds of millions of years, to when the earliest recognizable continents existed.

The Nile River has existed in one form or another for more than ten million years. Between about 6-5.3 million years ago the Mediterranean Sea periodically dried up partly or completely in the "Messinian salinity crisis"⁵⁴⁰ when the Strait of Gibraltar closed due to northward movement of the African tectonic plate. A basin up to 5 km (3.1 miles) deep was left over. During this time the Nile cut a deep, narrow canyon that filled up with river sediments after the Mediterranean refilled.⁵⁴¹ Its mouth, north of present-day Cairo, was some 2,500 meters (8,200 feet) below modern sea level. This was first found by Russian geologists working on the Aswan dam project in the early 1960s. Many other rivers emptying into the Mediterranean have deep canyons running from their present-day mouths down into the Mediterranean basin. Over these 6 million years the Nile has had varying amounts of flow ranging from virtually none to overflowing into the western desert.

The Watch Tower Society completely ignores all history that it cannot place within a few hundred years after Noah's Flood of 2370 BCE. Such deliberate ignoring of archaeological evidence is thoroughly dishonest. The Society pretends that all non-written history simply does not exist; one can find virtually no references in Watch Tower literature to Egyptian archaeology or paleontology prior to about 2000 BCE. This statement is a typical bit of rationalization:⁵⁴²

Since the Bible points to the year 2370 B.C.E. as the date of the global Flood, Egyptian history must have begun after that date. The problems in Egyptian chronology shown above are doubtless responsible for the figures advanced by modern historians who would run Egyptian history all the way back to the year 3000 B.C.E.

This claim is entirely based on *written* Egyptian history, which admittedly does have some problems. But archaeologists have found all manner of *physical* evidence proving that Egyptian civilization produced artifacts long before 2370 BCE. For example, the oldest stone pyramids were

⁵³⁷ The inaccuracy of $\frac{1}{4}$ day per year resulted in a 'rotating calendar' where the 1st day of the 1st month came one day earlier than the true solar year every four years. This resulted in a 1,460 year cycle (called the Sothic cycle) of the calendar, which has given Egyptologists another way to calibrate dates in Egyptian history.

⁵³⁸ <https://royalsocietypublishing.org/doi/full/10.1098/rspa.2013.0395>

⁵³⁹ https://en.wikipedia.org/wiki/History_of_ancient_Egypt https://en.wikipedia.org/wiki/History_of_Egypt
<https://www.history.com/topics/ancient-history/ancient-egypt>

⁵⁴⁰ https://en.wikipedia.org/wiki/Messinian_salinity_crisis

⁵⁴¹ <https://thenaturalhistorian.com/2016/06/01/the-lost-grand-canyon-of-egypt-another-monument-to-an-ancient-earth/>

⁵⁴² *Insight on the Scriptures*, Vol. 1, 1988, "Chronology", "Egyptian Chronology" pp. 450-451.

built over a period of some 400 years beginning about 2630 BCE. The idea of pyramids as tombs did not spring into existence suddenly, but gradually evolved from simpler tombs made of mud bricks.⁵⁴³ Earlier tombs of kings, called mastabas, were built at least as early as the beginning of the 1st Dynasty (ca. 3100-2950 BCE), first of mud brick and later of stone. The first stone pyramid was built for the 3rd Dynasty's king Djoser at Saqqara about 2630 BCE. Its construction shows the evolution of pyramid building,⁵⁴⁴ having been built as a "step pyramid".⁵⁴⁵ The first smooth-sided pyramid is the Red Pyramid at Dahshur, built for the first king of the 4th dynasty, Sneferu, about 2600 BCE. The Great Pyramid of Giza was built for Sneferu's successor, Kufu, about 2560. Others were built near it in the next few decades. An intact tomb from about 2400 BCE was recently discovered⁵⁴⁶ that contained many hieroglyphic carvings. The last pyramid of the 4th Dynasty was built about 2250 for the last king of the 4th dynasty, Pepy II. Later tombs were less elaborate affairs, with ones in the 2nd millennium BCE often being built in hidden caves carved into solid rock in the Valley of the Kings. Some pyramids were built in the 12th Dynasty (2000-1800 BCE) but not on the scale of the earlier ones.⁵⁴⁷

In its rejection of secular archaeology the Society closely follows the arguments long made by young-earth creationists and other Fundamentalists. These arguments have been debunked over and over again by real scientists and other knowledgeable people.⁵⁴⁸ Most of the objections raised by these people are nit-picking and piecemeal bits of the dog-ate-my-homework variety. The Society never deals with the specifics of most of the actual evidence given by Egyptologists, archaeologists and other scientists. Such evidence is given a blanket dismissal like the one shown above from the *Insight* book. Here is the full text of *Insight's* dismissal:

Egyptian Chronology. ... The following information shows why we prefer to hold to the chronology based on the Biblical reckoning.

Modern historians rely principally on certain documents in the form of Egyptian king lists or annals. Among these are: the fragmentary Palermo Stone, presenting what are considered to be the first five "dynasties" of Egyptian history; the Turin Papyrus, very fragmentary and giving a list of kings and their reigns from the "Old Kingdom" into the "New Kingdom"; and additional inscriptions in stone, likewise fragmentary. These separate lists and other independent inscriptions have been coordinated in chronological order by means of the writings of Manetho, an Egyptian priest of the third century B.C.E. His works, dealing with Egyptian history and religion, arrange the reigns of the Egyptian monarchs into 30 dynasties, an arrangement still used by modern Egyptologists. These sources, together with astronomical calculations, based on Egyptian texts dealing with lunar phases and the rising of the Dog Star (Sothis), have been used to produce a chronological table.

Problems of Egyptian chronology. Uncertainties are multiple. The works of Manetho, used to give order to the fragmentary lists and other inscriptions, are preserved only in the writings of later historians, such as Josephus (first century C.E.), Sextus Julius Africanus (third century C.E., hence over 500 years from Manetho's time), Eusebius (fourth century C.E.), and Syncellus (late eighth or early ninth century C.E.). As stated by W. G. Waddell, their quotations of Manetho's writings are fragmentary and often distorted and hence "it is extremely difficult to reach certainty in regard to what is authentic Manetho and what is spurious or corrupt." After showing that Manetho's source material included some unhistorical traditions and legends that "introduced kings as their heroes, without regard to chronological order," he says: "There were many errors in Manetho's work from the very beginning: all are not due to the perversions of scribes and revisers. Many of the lengths of reigns have been found impossible: in some cases the names and the sequence of kings as given by Manetho have proved untenable in the light of monumental evidence."—Manetho, introduction, pp. vii, xvii, xx, xxi, xxv.

⁵⁴³ The Greatest Masterminds Of Ancient Egypt https://www.youtube.com/watch?v=ze8fCgFN_fQ

⁵⁴⁴ https://www.youtube.com/watch?v=ze8fCgFN_fQ

⁵⁴⁵ <https://www.history.com/topics/ancient-history/the-egyptian-pyramids>

⁵⁴⁶ <https://www.mirror.co.uk/news/world-news/archaeologists-discover-ancient-4400-year-13737092>

⁵⁴⁷ https://en.wikipedia.org/wiki/Egyptian_pyramids

⁵⁴⁸ An amusing take on YEC claims: Making history fit the Bible <https://www.youtube.com/watch?v=s-AIQk4KZ6U>

The probability that concurrent reigns rather than successive reigns are responsible for many of Manetho's excessively long periods is shown in the book *Studies in Egyptian Chronology*, by T. Nicklin (Blackburn, Eng., 1928, p. 39): "The Manethonian Dynasties ... are not lists of rulers over all Egypt, but lists partly of more or less independent princes, partly ... of princely lines from which later sprang rulers over all Egypt." Professor Waddell (pp. 1-9) observes that "perhaps several Egyptian kings ruled at one and the same time; ... thus it was not a succession of kings occupying the throne one after the other, but several kings reigning at the same time in different regions. Hence arose the great total number of years."

Since the Bible points to the year 2370 B.C.E. as the date of the global Flood, Egyptian history must have begun after that date. The problems in Egyptian chronology shown above are doubtless responsible for the figures advanced by modern historians who would run Egyptian history all the way back to the year 3000 B.C.E.

One gets the impression from the above that historians merely pull Egyptian history from their hats without giving careful thought to their sources or whether the material hangs together. While some ancient sources are certainly unreliable, Egyptologists for well over a century have been able to put together a reasonably coherent history by using multiple sources, usually independent from one another, that give a consistent picture. Most importantly, these histories are often combined with archaeological finds that allow fairly solid dating of events and kings. Remember that the Society's dismissal of the radiocarbon and other methods of dating are entirely based on two things: the discredited vapor canopy notion, and the assumption that the Society's interpretation of 'Bible history' is correct. But all manner of physical and historical evidence disproves these notions.

A brief look with Internet search engines brings up some of the sources used by Egyptologists to reconstruct Egyptian history:

King lists: https://en.wikipedia.org/wiki/Lists_of_ancient_kings

Pharaoh lists: https://en.wikipedia.org/wiki/List_of_pharaohs

These source references lead to many others.

As for prehistory, there is much evidence that people inhabited Egypt and its environs for many thousands of years before written records first appear around 3,150 BCE. In chapter 2 on Prehistory, *The Oxford History of Ancient Egypt* describes evidence for people in the region during the Neolithic period:⁵⁴⁹

Two main periods can be distinguished: the Early Neolithic (8800-6800 BC), and a more recent period consisting of Middle (6500-5100 BC) and Late Neolithic (5100-4700 BC). For the Early Neolithic the most complete information comes from sites near Nabta Playa and Bir Kiseiba. Most sites are small, short-term camps of hunter-gatherers. Larger sites are always located in the lower parts of playa basins. Although these sites were apparently used for longer periods, they too were seasonally abandoned, since the lower parts of the playa basins were seasonally flooded. Sedentism was not yet known.

Lithics are characterized by numerous backed bladelets (often pointed) and some rare geometrics, as well as tools produced with the microburin technique. Every faunal collection of any size includes a few bones of cattle, which, according to the excavators, were domesticated (although this interpretation is not generally accepted), since it seems unlikely that cattle would have been able to survive without human aid in an arid environment that otherwise supports only desert-adapted animals. It is particularly significant that the fauna includes no remains of hartebeest, an animal that often occurs in the same ecological niche as wild cattle. It therefore seems most plausible that pastoralists were keeping wild cattle in an environment where the cattle would not have been able to survive by themselves. Before 7500 BC, it is possible that people and cattle came into the desert only during and after the summer rains, which coincide with the period of inundation of the Nile Valley, during which it would have been difficult to find herding facilities. After 7500 BC, the digging of wells is attested at Bir Kiseiba and other sites. Some of the wells have a shallow side basin for watering animals. The paucity of cattle

⁵⁴⁹ *The Oxford History of Ancient Egypt*, p. 32.

bones indicates that the animals were not used for meat production but mainly for protein in the form of milk and blood. In this manner, while humans helped cattle to survive in the Western Desert, the animals permitted people to live in this difficult environment. As well as keeping cattle, these people were hunting local wild animals, predominantly hare and gazelle.

It is presumed that the stone-grinding equipment found at nearly all sites from the beginning of the Early Neolithic was used for processing harvested wild plant foods, but the plants themselves have only been recovered at site E-75-6 at Nabta Playa. Among them are wild grasses, *Ziziphus* fruits, and wild sorghum.

The Oxford History goes on to describe evidence of human habitation in the period from the Early Neolithic through 4,000 BCE (pp. 32-43), such as pottery and potsherds, figurines and statuettes of clay and ivory, ostrich shells used as containers, shells from the Nile Valley and Red Sea, wells, slab-lined houses, wattle-and-daub constructions, storage pits containing various grains and tubers, sheep and goat remains appearing for the first time, various stone tools and arrowheads, hairpins, combs, bracelets, beads in bone and ivory, stone cosmetic palettes, hammered copper, and artifacts related to herding, hunting and fishing. In chapter 3 on the Naqada period (c. 4,000-3,200 BCE) many more sophisticated artifacts are pictured and described,⁵⁵⁰ such as the Narmer Palette⁵⁵¹ which contains hieroglyphics and carvings of people, animals and mythical beasts.

Neo-Babylonian Chronology

The Watch Tower Society's published views on the chronology of the Neo-Babylonian empire exist entirely to support its 1914 tradition. They are often confused as well as inaccurate. They are sometimes confused by simple incompetence, but more often confused and inaccurate by design, because Watch Tower leaders do not really want individual Jehovah's Witnesses to be knowledgeable enough competently to think about and discuss the details. In the broad view, we find in the Society's various discussions of Babylonian chronology a demonstration of one of W. C. Fields' classic lines:

"If you can't dazzle them with brilliance, baffle them with bulls..."—W. C. Fields

Neo-Babylonian chronology has been fairly well known since the time of Isaac Newton, and has been on solid footing for well over a century. Today, lists of the six kings and their dates of reign can be found in any number of references. Wikipedia has such a list:⁵⁵²

- [Nabu-apla-usur](#) 626–605 BC
- [Nabu-kudurri-usur II](#) 605–562 BC
- [Amel-Marduk](#) 562–560 BC
- [Neriglissar](#) 560–556 BC
- [Labaši-Marduk](#) 556 BC
- [Nabonidus](#) 556–539 BC

Many encyclopedias contain such lists, as well as detailed descriptions of the kings' reigns, as do good books such as:

*Handbook of Biblical Chronology*⁵⁵³

*The Mysterious Numbers of the Hebrew Kings*⁵⁵⁴

*The Gentile Times Reconsidered: Chronology and Christ's Return*⁵⁵⁵

⁵⁵⁰ *Oxford History*, pp. 44-57.

⁵⁵¹ https://en.wikipedia.org/wiki/Narmer_Palette

⁵⁵² https://en.wikipedia.org/wiki/Neo-Babylonian_Empire

⁵⁵³ Jack Finegan, *Handbook of Biblical Chronology*, Revised edition, 1998.

⁵⁵⁴ Edwin R. Thiele, *The Mysterious Numbers of the Hebrew Kings*, New Revised Edition, 1983.

⁵⁵⁵ Carl Olof Jonsson, *The Gentile Times Reconsidered: Chronology and Christ's Return*, 4th ed., 2004.

The Society acknowledges the line of kings in Nabopolassar's dynasty as accepted by virtually all historians:⁵⁵⁶

As the influence of the Chaldeans spread northward, the whole territory of Babylonia became known as "the land of the Chaldeans." Isaiah in his prophecies anticipated this Chaldean rise to power and their subsequent fall. (Isa 13:19; 23:13; 47:1, 5; 48:14, 20) Particularly was this domination manifest during the seventh and sixth centuries B.C.E. when **Nabopolassar**, a native of Chaldea, and his successors, **Nebuchadnezzar II, Evil-merodach (Awil-Marduk), Neriglissar, Labashi-Marduk, Nabonidus, and Belshazzar**, ruled the Third World Power, Babylon. (2Ki 24:1, 2; 2Ch 36:17; Ezr 5:12; Jer 21:4, 9; 25:12; 32:4; 43:3; 50:1; Eze 1:3; Hab 1:6) That dynasty came to its end when "Belshazzar the Chaldean king was killed." (Da 5:30) Darius the Mede was "made king over the kingdom of the Chaldeans."—Da 9:1

The Society also acknowledges that taking the lengths of reigns of these kings at face value, one arrives at 587 BCE rather than 607 BCE for the date of Jerusalem's destruction.⁵⁵⁷

In the following discussion I will not consider Nabopolassar.

From various Watch Tower publications we find the Society's acknowledgement of historical sources on how long various Babylonian kings reigned:⁵⁵⁸

⁵⁵⁶ *Insight*, Vol. 1, "Chaldea" p. 425

⁵⁵⁷ *The Watchtower*, November 1, 2011, p. 24: "Business tablets exist for all the years traditionally attributed to the Neo-Babylonian kings. When the years that these kings ruled are totaled and a calculation is made back from the last Neo-Babylonian king, Nabonidus, the date reached for the destruction of Jerusalem is 587 B.C.E. However, this method of dating works only if each king followed the other in the same year, without any breaks in between."

⁵⁵⁸ Nebuchadnezzar 43 years: w69 2/1 p. 89; it-1 "Babylon" p. 239; it-2 "Nebuchadnezzar" p. 480

Began reign in 625: it-1 "Babylon" p. 238; it-1 "Chronology" p. 463; w64 10/15 p. 636, 637; si 296

Began reign in 624: it-1 "Ashdod" p. 190; w00 5/15 p. 12; dp p. 19, 63

First regnal year 624: it-2 "Nebuchadnezzar" p. 480; w07 p. 18; si 296

Reign 624-582: it-2 "Nebuchadnezzar" p. 480; g 6/12 p. 13; g90 11/22 p.17

Died 582: it-1 "Babylon" p. 239

Immediately succeeded by Evil-Merodach: w65 1/1 p. 29; it-1 "Babylon" p. 239; it-1 "Archaeology" p. 147;

it-1 "Jehoiachin" p. 1267; w12 6/1 p. 5

Evil-Merodach (Awil-Marduk, Amil-Marduk, Amel-Marduk) 2 years: w65 1/1 p. 29;

it-1 "Evil-merodach" p. 773

Reign began 582: w59 it-1 "Babylon" p. 238; 5/1 p. 280 581; w65 1/1 p. 29; it-1 "Babylon" p. 773

Tablets through 2nd year found: it-1 "Chronology" p. 453

Immediately succeeded by Neriglissar: w65 1/1 p. 29; it-1 "Babylon" p. 239; it-1 "Belshazzar" p. 283

Neriglissar 4 years: w65 1/1 p. 29

Immediately succeeded by Labashi-Marduk: w65 1/1 p. 29

Tablets through 4th year found: it-1 "Chronology" p. 453

Labashi-Marduk

< 9 months: w65 1/1 p. 29

Immediately succeeded by Nabonidus: w65 1/1 p. 29; it-2 "Nabonidus" p. 458

Nabonidus reigned 17 years: w65 1/1 p. 29; w69 2/1 p. 89

Reigned 556-539: it-2 "Nabonidus" p. 457

Reign ended 539: it-1 "Cyrus" p. 567; si p. 139

Belshazzar

Made coregent by Nabonidus in 3rd year of his reign: w65 1/1 p. 29

Reign ended 539: it-1 "Babylon" p. 236

Reign 553-539: si p. 139

Abbreviations: w: *The Watchtower*; g: *Awake!*; si: *All Scripture Is Inspired of God and Beneficial*;

it-1, it-2: *Insight on the Scriptures*, Vol. 1 & 2; dp: *Pay Attention to Daniel's Prophecy!*

Nebuchadnezzar	43 years	immediately succeeded by:
Evil-merodach	2 years	immediately succeeded by:
Neriglissar	4 years	immediately succeeded by:
Labashi-Marduk	< 1 year	immediately succeeded by:
Nabonidus	17 years	

Total **66 years**

(counting Labashi-Marduk's reign as zero since historical sources say 2 months)

According to these same publications, Nebuchadnezzar's reign began in 625 BCE and the reigns of Nabonidus/Belshazzar ended in 539 BCE, for a total of **86 years**. Why the discrepancy?

Let's look at the Society's figures for the years of reign of individual kings, either stated directly or derived from various statements, along with the number of years from start through finish. Note that the Society's figures are confused. It appears that some writers do not know the difference between the Babylonian "accession year" (the year in which a king actually began to reign) and the 1st year (the year that is actually numbered as the 1st),⁵⁵⁹ so it is not entirely clear what the writer meant in some instances:

Nebuchadnezzar	625-582 BCE	43 years	immediately succeeded by:
Evil-merodach	582-580 BCE	2 years	immediately succeeded by:
Neriglissar	580-576 BCE	4 years	immediately succeeded by:
Labashi-Marduk	576-576 BCE	< 1 year	immediately succeeded by:
Nabonidus	576-539 BCE	37 years	????

Total **86 years**

(counting Labashi-Marduk's reign as zero since historical sources say 2 months)

Obviously there is a 20-year discrepancy in the reign of Nabonidus. Why? To help track it down, let's see what these same Watch Tower publications directly list for the years of reign of these kings:

Nebuchadnezzar	625-582 BCE	43 years	immediately succeeded by:
Evil-merodach		2 years	immediately succeeded by:
Neriglissar		4 years	immediately succeeded by:
Labashi-Marduk		< 1 year	immediately succeeded by:
Nabonidus	556-539 BCE	17 years	????

Total **86 years**

(counting Labashi-Marduk's reign as zero since historical sources say 2 months)

The scholarly consensus is that Nabonidus reigned 17 years from 556-539 BCE, and this is acknowledged in virtually all Watch Tower publications.

Clearly, then, the 20-year discrepancy is due to a hole in Watch Tower chronology between the end of Nebuchadnezzar's reign (582) and the start of Nabonidus' reign (556). The Society has never clearly assigned dates of reign to Evil-merodach, Neriglissar, or Labashi-Marduk. The Society has sometimes vaguely hinted that unknown kings might have ruled in this hole,⁵⁶⁰ but has never provided any concrete suggestions for such kings. The only serious attempt at naming such kings I am aware of was made by a Norwegian JW apologist (Rolf Furuli) in a 2007 book, but this was thoroughly refuted by Carl Olof Jonsson.⁵⁶¹ Jonsson concluded:

There is no room for the insertion of any "unknown kings" or any "extra regnal years" into the Neo-Babylonian period. Tens of thousands of dated tablets that fix the length of each reign throughout the whole period, as well

⁵⁵⁹ One might call the accession year the 0th year, which is followed by the 1st year, etc.

⁵⁶⁰ cf. *The Watchtower*, November 1, 2011, p. 24.

⁵⁶¹ "Were there unknown Neo-Babylonian kings?" <http://kristenfrihet.se/kf3/review5.htm>

as several dozens of records of astronomical observations dated to these reigns that turn them into an absolute chronology make any attempt to lengthen or shorten this period impossible. All attempts to revise the chronology of the Neo-Babylonian period have failed and have forced the proponents of such revisions to either give them up or to claim that all the ancient documents that contradict their theories must have been falsified by later writers and copyists. When reality is in conflict with the theory, reality has to be rejected!

The tens of thousands of dated tablets from the Neo-Babylonian period are absolute proof that there are no holes in the accepted chronology, contrary to Watch Tower innuendo. The tablets are dated by reference to the year of a king's reign, much like calendar dates today are used for dating events. Most of these dated tablets are simple records of everyday monetary transactions, much like today's dated receipts for purchases of goods and services. Such tablets have been found for every year in Neo-Babylonian chronology, so that a continuous year-by-year record of kings' reigns can be constructed from the tablets alone. Most importantly, these records are independent of historical and astronomical records that are also dated by kings' reigns, and fully agree with them. Thus, the Society's negative innuendos are disproved.

The Watch Tower Society is well aware of all of the above information. Therefore its attempts to debunk secular chronology are simply bad-faith attempts to support its tradition, based on dishonest analyses of available historical records and literature. Why can I say "dishonest"? Because a careful look at the Society's attempts to deal with the issues shows that it often misrepresents the records or literature, and when its writers cannot find 'plausible' ways to misrepresent the data, they ignore it.

Misrepresentation of the Bible and History in the 1914 Doctrine

A great deal of information on the 1914 doctrine and why it is wrong can be found on the AD1914 website.⁵⁶²

Historical Proof Why the 607 to 1914 Chronology Is Wrong

Summary of Chronology and Doctrine

The Society cobbles together a set of narratives and passages from various Bible books, interprets bits and pieces of information in dubious ways, and comes up with its doctrine of "the Gentile times", also called "the appointed times of the nations".⁵⁶³ The former term is based on the translation of Luke 21:24 in the *King James Version*:

Jerusalem shall be trodden down of the Gentiles, until the times of the Gentiles be fulfilled.

"Appointed times" is based on the translation of Luke 21:24 in the *New World Translation*:

Jerusalem will be trampled on by the nations, until the appointed times of the nations are fulfilled.

These "times" are claimed to be a period of 2,520 years, from when Jerusalem was destroyed by the Babylonian army of Nebuchadnezzar in 607 BCE, to 1914 CE. The period is said to be the time from when all earthly authority of "God's throne" as represented by the Jewish kings was removed, to when that authority was restored by God's appointing his King, Jesus Christ, to authority over God's Kingdom in 1914. The period is calculated by referring to the dream of Nebuchadnezzar in Daniel

⁵⁶² See the articles at <https://ad1914.com/> on "1914", "Gentile Times & 607", "Parousia & Sign"

⁵⁶³ See the articles at <https://ad1914.com/about-2/>

chapter 4, where Nebuchadnezzar is likened to a great tree that gets cut down and is “banded”, or made inactive, for “seven times”. The Society declares that Nebuchadnezzar experienced seven *years* of madness, after which, Daniel 4 explains, his kingship was reactivated. The Society then parallels Nebuchadnezzar’s time of madness with the time that no king sat on “Jehovah’s throne”, so that Jehovah’s throne was unoccupied from when Jewish king Zedekiah was deposed at Jerusalem’s destruction, up until that throne was again occupied by Jesus Christ in 1914. While Daniel 4 does not say that the “seven times” were seven years, the Society declares that they were. It then declares that these years, in the prophetic parallel, were really “prophetic weeks of years”, each week comprising 360 literal calendar years. The length of these “times” is calculated by reference to Revelation 12:6,14, where in an unrelated narrative 1,260 days is equated to 3 ½ “times”. Thus a period of 7 (2 × 3 ½) “times” is equated to 2 × 1,260 = 7 × 360 = 2,520 literal years. Then the Society declares that this period of 2,520 years began when king Zedekiah was removed from power in 607 BCE, and that when it ended in 1914 CE, God appointed Jesus Christ as the invisible King of God’s Kingdom at the beginning of “the conclusion of the system of things”. All this has been explained in many Watch Tower publications since 1879, with a ‘clear’ exposition in the 1981 book “*Let Your Kingdom Come*”.⁵⁶⁴ The way the Watch Tower Society picks the starting and ending dates for this 2,520 year period is explained on pages 136-137:

25 We are helped to fix the calendar date for the start of the Gentile Times by consulting God’s Word. As we have already noted, Jehovah allowed the Babylonians to conquer his people, destroy Jerusalem and its temple, remove Zedekiah from “the throne of the kingship of Jehovah” and take the Jews into Babylonian exile. (1 Chronicles 28:5) Events that followed “in the seventh month” led the few Jews who had remained in the land to flee to Egypt, so that Judah then lay completely desolate. (2 Kings 25:1-26; Jeremiah 39:1-10; 41:1-43:7) Jehovah’s prophet Jeremiah had foretold that the desolation would last for 70 years. (Jeremiah 25:8-11) Then Jehovah would ‘call to account against the king of Babylon his error’ and ‘bring His people back to this place,’ their homeland.—Jeremiah 25:12; 29:10.

26 Daniel himself lived in Babylonian exile for many years. On the night that Babylon fell to the Medo-Persians, he was an eyewitness to the fulfillment of his own prophecy, and of other prophecies, against that city. (Daniel 5:17, 25-30; Isaiah 45:1, 2) Historians calculate that Babylon fell in early October of the year 539 B.C.E. Soon thereafter, Daniel discerned from Jeremiah’s prophecy that the 70-year captivity and desolation for Jerusalem was about ended. (Daniel 9:2) And he was right! In the first year of Cyrus the Persian, which most historians date from the spring of 538 B.C.E., Cyrus issued a decree permitting the Jews to return to their homeland to repopulate it and to rebuild Jehovah’s temple there. (2 Chronicles 36:20-23; Ezra 1:1-5) The inspired historical account tells us that the Jews responded readily to Cyrus’ decree, so that “when the seventh month arrived the sons of Israel were in their cities.” (Ezra 3:1) By our calendar that would be October, 537 B.C.E., which date therefore marks the completion of the foretold 70 years of desolation.

27 That historical information is important to us in determining the beginning of “the appointed times of the nations.” Since the 70 years of desolation for Judah and Jerusalem ended in 537 B.C.E., they began in 607 B.C.E. That would be the year when Zedekiah ceased to sit upon the “throne of the kingship of Jehovah” in Jerusalem. It therefore marks also the date for the beginning of the Gentile Times. Counting from October 607 B.C.E., the “seven times” of 2,520 years bring us down to early October 1914 C.E., when, as we have already seen, Jesus’ great prophecy on “the conclusion of the system of things” started to be fulfilled.

Many of the statements in the above quoted material are demonstrably wrong or unjustified. Because the basic doctrine of “the Gentile times” is cobbled together willy-nilly from disparate Bible passages, and the result is justified by many false claims about dates and such, the 607-1914 doctrine is wrong.

⁵⁶⁴ “*Let Your Kingdom Come*”, 1981, ch. 14 “The King Reigns!”, pp. 127-140.

The key dates and figures in Watch Tower chronology are:

539 BCE: Babylon is conquered

537 BCE: Jews return to Judah

70 years: Desolation of Judah; captivity and exile of Jews in Babylon

607 BCE: Destruction of Jerusalem; beginning of desolation/captivity/exile

The Watch Tower Society puts the figures together like this:

539 BCE to 537: Jews prepare and return to Judah

537 BCE + 70 years = 607 BCE

607 BCE + 2,520 + 1 → 1914 CE (no “zero year” from 1 BCE to 1 CE)

The 539 BCE date is universally accepted by secular and biblical scholars. The rest of the figures are unevidenced or provably wrong—see the discussions below.

Details of Why the 607 BCE to 1914 CE Chronology Is Wrong

Let’s set aside the cobbled-together, incoherent calculation of 2,520 years as a notion ridiculous on its face, and concentrate on the chronological claims that put its claimed beginning in 607 BCE. Because these claims are demonstrably wrong—demonstrated by a combination of archaeological facts and sound biblical exegesis—the starting point for the imaginary period of 2,520 years is wrong, and thus all doctrines based on it are wrong.

See also the articles here: <https://www.jwfacts.com/watchtower/607-7-times.php>

According to extremely well-documented secular and religious chronology, the Neo-Babylonian empire came to power in 626 BCE under king Nabopolassar and ended in 539 BCE when king Nabonidus and vice-king Belshazzar were dethroned by Cyrus the Great of Persia. The Babylonians took Jewish captives from Judah and Jerusalem into Babylonian exile in four stages: in 605, 597, 587 and 582 BCE. During his first regnal year as king of Babylon, Cyrus the Great released many Babylonian captives, including the Jews. A group of Jews returned to Judah in 538 BCE. The Bible is not clear about how many captives were taken at the various dates. Over the next seven centuries the several periods of captivity merged into one legendary figure: 70 years of captivity/exile. This happened even though the main period of captivity lasted 49 years, from Jerusalem’s destruction in 587 through the Jews’ return in 538 BCE.

The Watch Tower Society claims that Jerusalem was destroyed in 607 rather than 587 BCE, based on a defective interpretation of various Bible passages and simply ignoring others. It claims that the land of Judah was completely desolated, without inhabitants, for exactly 70 years, and that this period was also the main period of captivity of the Jews and exile in Babylon. It argues that the “70-year captivity/exile/desolation” began in 607 and ended in 537 BCE, and that its unique notion of a prophetic period of 2,520 years (the gentile times, or appointed times of the nations, of Luke 21:24) began in 607 BCE and ended in 1914 CE, ushering in Christ’s invisible Kingdom.

The Society’s chronological arguments about 607-1914 have been debunked by literally hundreds of competent commentators since they originated in 1876 with an article by the Watch Tower Society’s

founder Charles Taze Russell⁵⁶⁵ (he used 606 rather than 607 BCE as the Watch Tower does today; this was not changed until 1943-1944)⁵⁶⁶.

The most comprehensive debunking of Watch Tower chronology is found in the various editions of the book *The Gentile Times Reconsidered*⁵⁶⁷ and its associated website. The book was out of print until recently, rather expensive and hard to find, but large parts are available online: <http://kristenfrihet.se/english/epage.htm> A revised edition was published in 2021.

Many other online debunkings are available, of which these are among the best:

<https://jeffro77.wordpress.com/>

<https://ad1914.com/>

<https://www.jwfacts.com/watchtower/607-7-times.php>

<https://critiquesonthewatchtower.org/>

http://www.jwstudies.com/jehovah_s_witnesses.html

These resources in turn point to the far larger body of debunkings written in the last 140 years.

Some excellent summary articles are:

<https://jeffro77.wordpress.com/index/607-for-dummies/>

<https://ad1914.com/biblical-evidence-against-watchtower-society-chronology/>

https://www.jwstudies.com/babylonian_captivity.html

537 BCE: Jews Actually Return to Judah in 538

While the Watch Tower Society claims 537 BCE, the correct date for the return of the Jews to Judah is 538 BCE. The book of Ezra plus a statement by Josephus proves this.⁵⁶⁸ Determination of the correct date depends partly on exactly when Cyrus the Great issued his decree releasing Babylonian captives. No historical sources pin down the date of this decree.

The Society fails to give any evidence for its 537 date. Rather, it speculates that Cyrus issued his decree of release late in his 1st regnal year close to the spring of 537, so that the Jews began their return

⁵⁶⁵ The chronology was actually first set forth in 1875 by the Second Adventist Nelson Barbour. Russell got hold of the issues of Barbour's magazine *Herald of the Morning* in which Barbour laid out his "Gentile times" ideas beginning with the June 1875 issue. Russell adopted Barbour's ideas completely, and published his own article on the "Gentile times" in the October 1876 issue of a religious magazine *The Bible Examiner*. Russell and Barbour began to collaborate, and published several items in 1877-1878. In 1878 they parted company, and in 1879 Russell started what became the Watch Tower Society's flagship publication, *Zion's Watch Tower and Herald of Christ's Presence*. That name came from Barbour's teaching that Christ had invisibly returned in 1874, which of course needed much "heralding". The Watch Tower Society taught that doctrine up through somewhere between 1929 and 1943 (see Appendix A in <https://critiquesonthewatchtower.org/new-articles/2019/02/parousia.pdf> for details).

For a thorough examination of *The Bible Examiner*, see <https://ad1914.files.wordpress.com/2013/12/how-many-mistakes-in-one-paragraph.pdf>

⁵⁶⁶ <https://critiquesonthewatchtower.org/old-articles/2006/02/evolution-of-606-to-607-bce-in.html>

⁵⁶⁷ Carl Olof Jonsson, *The Gentile Times Reconsidered: Chronology and Christ's Return*, 4th ed., 2004.

⁵⁶⁸ <https://jeffro77.wordpress.com/index/607-for-dummies/>

<https://ad1914.com/biblical-evidence-against-watchtower-society-chronology/>

https://critiquesonthewatchtower.org/new-articles/2019/02/why_jews_returned_538.pdf

journey to Judah in the early spring of 537, thus returning to Judah by the autumn of 537 (Tishri 1). Most often the Society's expositions gloss over the details and simply declare that 537 is the correct date. Note how the above-quoted book "*Let Your Kingdom Come*" does this (§ 26):

In the first year of Cyrus the Persian, which most historians date from the spring of 538 B.C.E., Cyrus issued a decree permitting the Jews to return to their homeland to repopulate it and to rebuild Jehovah's temple there. (2 Chronicles 36:20-23; Ezra 1:1-5) The inspired historical account tells us that the Jews responded readily to Cyrus' decree, so that "when the seventh month arrived the sons of Israel were in their cities." (Ezra 3:1) By our calendar that would be October, 537 B.C.E., which date therefore marks the completion of the foretold 70 years of desolation.

The trouble with the Society's implicit assumption is that Cyrus could have issued his decree of release any time from the spring of 538 to the spring of 537. In principle this would allow the Jews to have arrived back in Judah by the autumn of 538 or 537 BCE. But starting with 538 rather than 537 kills the Society's 607-1914 chronology, and so it chooses to gloss over the problem because it has no solution. Thus, most of its comments gloss over the issue, and a small handful use weasel language like "evidently the Jews returned in 537".

Because the 537 date is based on speculation, but the 538 date is based on the witness of the book of Ezra plus Josephus' statement, the 607 date is based on speculation.

The Watch Tower Society's claims about these dates have changed over the years. Nelson Barbour used 536 BCE for the 1st year of Cyrus, and also for the year of the Jews' return. Thus he arrived at 606 BCE for the date of Jerusalem's destruction. Then he neglected the fact that there is no "zero year" between 1 BCE and 1 CE when he calculated $606 + 2,520 \rightarrow 1914$. C. T. Russell adopted all of these errors. Although various members of the Bible Students and the Watch Tower organization knew about these errors since at least 1904, the Society failed to correct them until 1943 and 1944.⁵⁶⁹

The way in which the errors were 'corrected' is a classic example of how Watch Tower leaders have lied to the community of Jehovah's Witnesses, and how they disrespect the intelligence and integrity of their followers. It also proves that the main goal of these leaders, with respect to their "Bible chronology", is not to understand what the Bible combined with solid secular history indicate about chronological issues, but to uphold the Society's 1914 date.

The arguments the Society used to change the original 606 date to 607 are a good example of amusing and deliberate verbal sleight-of-hand via gobble-de-goop. As shown in the above footnote reference, the changes were made in the 1943 book "*The Truth Shall Make You Free*" and the 1944 book "*The Kingdom Is At Hand*". The first book failed to explain that the change of dates was actually a change, but gave the impression it was merely a slight adjustment in viewpoint, saying about "the Gentile times":

Beginning in 606 B.C., and being seven in number, when would these 'times' end and the righteous overlordship of God's kingdom be established? ... In Nebuchadnezzar's time the year began counting from the fall of the year, or about October 1, our time. Since he destroyed Jerusalem in the summer of 606 B.C., that year had its beginning in the fall of 607 B.C. and its ending in the fall of 606 B.C. Inasmuch as the count of the Gentile "seven times" began its first year at the fall of 607 B.C., it is simple to calculate when they end.

This is obvious gobble-de-goop designed to fool the Society's readers. Following Russell's lead, it had always taught that "the Gentile times" began about October 1, 606 BCE. It had always understood that the Jewish secular year began on Tishri 1 (about Oct. 1). So the author's bringing in the vague idea

⁵⁶⁹ For a comprehensive look at the dishonest way the WTS handled the errors, see "The Evolution of 606 to 607 B.C.E. in Watchtower Chronology" <https://critiquesonthewatchtower.org/old-articles/2006/02/evolution-of-606-to-607-bce-in.html>

that “in Nebuchadnezzar’s time the year began counting from the fall of the year” is irrelevant and is a red herring designed to distract the reader’s attention. The mention of the destruction of “Jerusalem in the summer of 606 B.C.” is a further distraction designed to focus the reader’s attention on August 606 rather than on October 606. The result of this subterfuge is that the careless or naïve reader has gotten the impression that the start of “the Gentile times” was moved back ten months from August 606 to October 607, when the author had really moved it back one full year.

One of the problems with this lying is that it is easy for a careful reader to see where it falls apart, and how one lie often requires more lies. For example, C. T. Russell and the Society had always taught that Jerusalem was destroyed in August, 606 BCE, but **the “Truth” book was now teaching that “the Gentile times” began counting ten months before Jerusalem fell!** The book retained the 606 date for Jerusalem’s destruction through its entire length, even though this contradicted the “Gentile times” doctrine. The Society did not realize this until the next year’s book was published, which contained a chart of significant dates in Watch Tower chronology. Since the 606 date for Jerusalem’s destruction had been a prominent feature of Watch Tower teaching for some 64 years, the book explained in a footnote (p. 171):

The following chronology shows the date of Jerusalem’s destruction as in the year 607 before Christ. This recognizes the fact that the ancient reckoning of the vulgar year began in the fall. In other words, the vulgar year 606 B.C. really began in the fall of 607 B.C. As stated on page 239 ([para.] 1) of “*The Truth Shall Make You Free*”: “Inasmuch as the count of the Gentile ‘seven times’ began its first year at the fall of 607 B.C., it is simple to calculate when they end. From the fall of 607 B.C. to the fall of B.C. 1 is exactly 606 years... Hence from the fall of B.C. 1 to the fall of A.D. 1914 is 1,914 years.”

A careful reader would have noted that this was yet another round of deceptive gobble-de-goop that capitalized on the author’s recognition that no loyal JW would have seen, or at least acknowledged, the deception in the previous year’s book. The author pretended to explain why the date for Jerusalem’s destruction had been moved back exactly one year in the chart. But the only explanation offered was more gobble-de-goop based on the gobble-de-goop set forth in the previous year’s book. The reader is given the false impression that last year’s book gave full justification for the change of Jerusalem’s destruction from 606 to 607 BCE, when it explicitly taught that the destruction was in 606 BCE. Note that the change in the 1943 book was on page 239. But look at these statements on later pages:

According to God’s rule of action prior to the Flood and also Jerusalem’s destruction in 606 B.C....—p. 308
When [Jerusalem] began to be trodden down of the Gentiles, in 606 B.C....—p. 299

The blatant lying demonstrated in the above discussion has been compounded again and again in Watch Tower publications. For example, the 1988 book *Revelation—Its Grand Climax At Hand!* mentioned (p. 105) the conversion of the 606 date to 607 BCE, but made it appear as if God had directed all this misunderstanding and lying gobble-de-goop, and called the change an “adjustment”:

“It was in B.C. 606, that God’s kingdom ended, the diadem was removed, and all the earth given up to the Gentiles. 2520 years from B.C. 606, will end in A.D. 1914.” * —*The Three Worlds*, published in 1877, page 83...

* Providentially, those Bible Students had not realized that there is no zero year between “B.C.” and “A.D.” Later, when research made it necessary to adjust B.C. 606 to 607 B.C.E., the zero year was also eliminated, so that the prediction held good at “A.D. 1914.”—See “*The Truth Shall Make You Free*,” published by the Watch Tower Society in 1943, page 239.

Note that the *Revelation* book does not state *what* was adjusted from 606 to 607 BCE, or why. “*The Truth Shall Make You Free*” talked only about the start of the Gentile Times changing from 606 to 607

BCE, and it explicitly stated that Nebuchadnezzar “destroyed Jerusalem in the summer of 606 B.C.” *The Kingdom Is At Hand* changed the date of Jerusalem’s fall from 606 to 607 BCE with no explanation other than referring to *The Truth Shall Make You Free*, and changed the date of the Jews’ return from exile from 536 to 537 BCE, and the date of Babylon’s fall from 538 to 539 BCE with no explanation whatsoever. Also note that the *Revelation* book does not say what sort of research made the change necessary, nor does *The Truth Shall Make You Free*. In fact, because of the author’s obvious misunderstanding of whether the “vulgar” year ran from winter to winter or from fall to fall or from spring to spring, and of related issues, *The Truth Shall Make You Free* had no logical basis for an argument at all. The real reason 606 BCE was “adjusted” to 607 BCE was to fix the “zero year” problem, which had been pointed out by Watch Tower readers for decades, but the *Revelation* book implied an inversion of cause and effect that kept its readers in the dark.

This whole business is another case where the Society glosses over embarrassing information with hazy arguments, because sufficiently vague statements can never be pinned down or challenged, and readers who realize that something is not right are not easily able to pin down the reasons.

With the above information in mind, again consider some of David Splane’s statements in the JW Broadcasting video:

Splane 1:42: “This month I’d like to talk about the efforts Jehovah’s organization is making to produce literature, publications, articles, that are as accurate as possible. We’re going to talk about accuracy, accuracy of statement.”

Splane 5:09: Begins giving examples of how Watch Tower writers are careful to check their facts in relatively minor instances. Some examples of inaccurate statements in earlier Watch Tower literature are given, along with an explanation of the inaccuracy. But Splane fails to explain up front that these are corrections to the earlier Watch Tower statements, thus giving the impression to naïve readers that they are from non-Watch Tower literature. Only at the very end of these examples does Splane make a vague reference (17:00) to this: “The statements were based on the best research we had at the time.” All these things clearly demonstrate the Society’s proclivity to strain out the gnat and swallow the camel.

Splane 17:20: “When credible research reveals that we have to adjust or tweak a statement that we made in the past, we do so without hesitation. Our goal is to provide information that is as accurate as possible, because we know that you brothers and sisters use this information, you quote it in the field ministry, you use it in your public talks, and so we want to make sure that our brothers are fed with the most accurate spiritual food possible. We’re imperfect, of course, and we are going to make mistakes. And when we do, we have to correct them. Our goal is to do the best we can in all our imperfection.”

Splane 18:00: “Well how does it make you feel? I know how it makes me feel. I’m grateful that Jehovah’s organization takes accuracy so seriously.

The above-mentioned *Revelation* book referred to the 1943 ‘correction’ of the start of “the Gentile times” from 606 to 607 BCE., but failed to mention how the 1944 book lied about ‘correcting’ the date for Jerusalem’s destruction. It failed to mention that the ‘correct’ figures had been known for decades, even to Russell himself, and to explain why it took until 1943-1944 to publish the ‘correct’ figures.

Does any of that jibe with Splane’s claim that his organization wants (and by implication, has always wanted) to “produce literature, publications, articles, that are as accurate as possible”? Because the ‘correct’ figures regarding 606-607 had been known to Russell and various other Bible Students for decades, is it really true that the Watch Tower Society corrects its errors “without hesitation”? When secular scholars had known for centuries that there was no “zero year”, how does the Society justify the *Revelation* book’s implication that the Bible Students’ failure to know about it was a product of divine providence—i.e., that God caused them not to know?

70 Years of Captivity/Exile/Desolation?

The Watch Tower Society bases its interpretation of “the 70 years” mentioned by the book of Jeremiah and other Bible books on a series of demonstrably wrong claims about various passages in the books of Jeremiah, 2 Kings, Zechariah, and others. The material quoted above from the *Kingdom Come* book sets forth a number of these false claims, which I will briefly examine. Again for a comprehensive look and full justification of my comments, see the above Web links.

The *Kingdom Come* book states:

25 We are helped to fix the calendar date for the start of the Gentile Times by consulting God’s Word. As we have already noted, Jehovah allowed the Babylonians to conquer his people, destroy Jerusalem and its temple, remove Zedekiah from “the throne of the kingship of Jehovah” and take the Jews into Babylonian exile. (1 Chronicles 28:5)

Jerusalem was destroyed about August of 587 BCE, which the Society claims was 607 BCE. All reputable modern historians agree that either 587 or 586 was the correct date, with the discrepancy due to the Bible’s ascribing the date sometimes to Nebuchadnezzar’s 19th year and sometimes to his 18th year, plus uncertainty about the dating method used by the writer of a particular Bible book. The best modern scholarship shows that 587 BCE is the correct date.⁵⁷⁰

Events that followed “in the seventh month” led the few Jews who had remained in the land to flee to Egypt, so that Judah then lay completely desolate. (2 Kings 25:1-26; Jeremiah 39:1-10; 41:1–43:7)

The 7th month (Tishri) was around the end of September to the end of October. The Society’s traditional date for the beginning of the “desolation of Judah” was October 1 by the Julian calendar. However, various historians and the Bible itself show that Judah was not completely desolate after October. Again see the Web links.

Jehovah’s prophet Jeremiah had foretold that the desolation would last for 70 years. (Jeremiah 25:8-11)

False. Here is that passage (*NWT* 1984):

8 Therefore this is what Jehovah of armies has said, “For the reason that YOU did not obey my words, 9 here I am sending and I will take all the families of the north,” is the utterance of Jehovah, “even [sending] to Neb·u·chad·rez·zar the king of Babylon, my servant, and I will bring them against this land and against its inhabitants and against all these nations round about; and I will devote them to destruction and make them an object of astonishment and something to whistle at and places devastated to time indefinite. 10 And I will destroy out of them the sound of exultation and the sound of rejoicing, the voice of the bridegroom and the voice of the bride, the sound of the hand mill and the light of the lamp. 11 And all this land must become a devastated place, an object of astonishment, and these nations will have to serve the king of Babylon seventy years.

The passage is talking about Judah *and* “all these nations round about”. History shows, and the Society agrees, that most of the lands around Judah submitted to Nebuchadnezzar’s kingship and were left in their homelands, but had to pay tribute. Various Bible passages show that the phrase “devastated place” does not necessarily mean complete destruction and desolation, but has various degrees. The mildest degree is that the place was subject to another power, such that a nation that fully submitted to Nebuchadnezzar would be described as devastated in a relative sense, i.e., relative to having full independence. In other words, it was no longer pristine in a political or spiritual sense.

Nor does the passage say that Judah and “all these nations round about” would be a “devastated place” *for 70 years*. Rather, it says that they would “**serve** the king of Babylon seventy years.” That

⁵⁷⁰ “When Did Jerusalem Fall?” <http://www.rcyoung.org/papers.html>
https://critiquesonthewatchtower.org/new-articles/2019/02/Jerusalem_587_586.pdf

servitude could be by peacefully submitting to Nebuchadnezzar, all the way up to much of the populace being killed or taken into captivity/exile and their land desolated. This is all set forth in detail in Jeremiah 25:15 through chapter 27, as I now show by quoting the relevant passages.

It should also be noted that neither Jeremiah nor any other Bible writer indicates when “the 70 years” began. However, the Bible indicates clearly when the period ended; see below. The best arguments indicate that the period began in 609 BCE when Babylon overthrew the last remnants of the Assyrian empire.

Note how verses 27:6-7 explicitly state that God tells Judah and the nations round about that they were guaranteed to serve Babylon:

And now I myself have given all these lands into the hand of Neb·u·chad·nez´zar the king of Babylon, my servant; and even the wild beasts of the field I have given him to serve him. And **all the nations must serve even him and his son and his grandson** until the time even of his own land comes, and many nations and great kings must exploit him as a servant.’

Note how verse 27:8 explains that God wanted the nations to **serve** Babylon—not be destroyed.

‘And it must occur that the nation and the kingdom that will not **serve** him, even Neb·u·chad·nez´zar the king of Babylon; and the one that will not put its neck under the yoke of the king of Babylon, with the sword and with the famine and with the pestilence I shall turn my attention upon that nation,’ is the utterance of Jehovah, ‘until I shall have finished them off by his hand.’

In other words, destruction and devastation were *conditional* upon a nation **refusing to serve** Babylon. Those things were not inevitable. Verses 9-10 emphasize this:

‘And as for YOU men, do not listen to YOUR prophets and to YOUR practicers of divination and to YOUR dreamers and to YOUR practicers of magic and to YOUR sorcerers, who are saying to YOU: “YOU men will not **serve** the king of Babylon.” For falsehood is what they are prophesying to YOU, for the purpose of having YOU taken far away from off YOUR ground; and I shall have to disperse YOU, and YOU will have to perish.’

In combination with these passages, verse 11 is key to understanding that the events of Jeremiah 25:8-11 were conditional:

‘And **as for the nation that will bring its neck under the yoke of the king of Babylon and actually serve him, I will also let it rest upon its ground,**’ is the utterance of Jehovah, ‘and it will certainly cultivate it and dwell in it.’

Putting these passages together, it is obvious that Judah and all the nations round about would serve Babylon for 70 years, but whether that servitude would be “upon its own ground” or in captivity in Babylon was conditional upon its submitting to Babylonian authority.

This is stated again in Jer. 27:12-13, 17:

12 Even to Zed·e·ki´ah the king of Judah I spoke according to all these words, saying: “Bring YOUR necks under the yoke of the king of Babylon and serve him and his people and keep on living. 13 Why should you yourself and your people die by the sword, by the famine and by the pestilence according to what Jehovah has spoken to the nation that does not serve the king of Babylon? 14 And do not listen to the words of the prophets that are saying to YOU men, ‘YOU will not serve the king of Babylon,’ because falsehood is what they are prophesying to YOU.

17 Do not listen to them. Serve the king of Babylon and keep on living. Why should this city become a devastated place?

Clearly, the Watch Tower’s exposition is unfaithful to the Bible text.

The key point to understand about “the 70 years” is that Jeremiah carefully explains that it was to be mainly a period of servitude of Judah and the surrounding nations to Babylon. In other words, **the 70 years were a period of Babylonian supremacy** over the Near East. If a nation submitted to Babylon, God would allow it to serve on its own ground; if not, it would serve in captivity. The Jews under king Zedekiah rebelled, and suffered captivity and exile in Babylon.

Moving on to the next statement in the *Kingdom Come* book:

Jehovah’s prophet Jeremiah had foretold that the desolation would last for 70 years. (Jeremiah 25:8-11) Then Jehovah would ‘call to account against the king of Babylon his error’ and ‘bring His people back to this place,’ their homeland.—Jeremiah 25:12; 29:10.

The referenced passages are extremely important parts of Jeremiah’s exposition on “the 70 years” because they explicitly state when they were to end.

11 And all this land must become a devastated place, an object of astonishment, and these nations will have to serve the king of Babylon seventy years. 12 And it must occur that **when seventy years have been fulfilled I shall call to account against the king of Babylon and against that nation...**

When the 70 years ended, or were fulfilled or completed, God would “call to account” or punish the king of Babylon and “that nation”. That unarguably occurred when the armies of Cyrus the Great conquered Babylon in October 539 BCE, killed its vice-king Belshazzar, and made its last king Nabonidus a vassal.

Some of the events associated with Babylon’s fall are related in Daniel chapter 5. On the night Babylon was conquered, vice-king Belshazzar held a huge feast. During the feast, the famous words “mene, mene, tekel and parsin” were magically written on a wall in the king’s palace. Daniel was called in to interpret, and the result is stated as follows:

26 “This is the interpretation of the word: ME’NE, God has numbered [the days of] your kingdom and has finished it.

27 “TE’KEL, you have been weighed in the balances and have been found deficient.

28 “PE’RES, your kingdom has been divided and given to the Medes and the Persians.”

30 In that very night Bel·shaz’zar the Chal·de’an king was killed 31 and Da·ri’us the Mede himself received the kingdom.

So the 70 years allotted to Babylon ended that night with Babylon’s being conquered. Babylon was called to account, or punished, by being conquered and its king being killed, and its rule being given to the Medes and Persians. The dynasty begun by Nabopolassar and continued in Nebuchadnezzar’s line of descent had ended.

The fact that Nebuchadnezzar’s dynasty ended with the fall of Babylon is acknowledged by the Society:⁵⁷¹

Nebuchadnezzar headed a dynasty that ruled over the Babylonian Empire. It was overthrown by Medo-Persia.

Under the control of the Assyrian World Power, Babylon figured in various struggles and revolts. Then with the decline of the second world empire, the Chaldean Nabopolassar founded a new dynasty in Babylon about 645 B.C.E. His son Nebuchadnezzar II, who completed the restoration and brought the city to its greatest glory, boasted, “Is not this Babylon the Great, that I myself have built?” (Da 4:30) In such glory it continued as the capital of the third world power until the night of October 5, 539 B.C.E. (Gregorian calendar), when Babylon fell before the invading Medo-Persian armies under the command of Cyrus the Great.

⁵⁷¹ *The Watchtower*, May 15, 2000, p. 13; *Insight*, Vol. 1, “Babylon”, pp. 236-237; “Chaldea” p. 425

That fateful night in the city of Babylon, Belshazzar held a banquet with a thousand of his grandees. Nabonidus was not there to see the ominous writing on the plaster wall: “MENE, MENE, TEKEL and PARSIN.” (Da 5:5-28) After suffering defeat at the hands of the Persians, Nabonidus had taken refuge in the city of Borsippa to the SW. But Jehovah’s prophet Daniel was on hand in Babylon on that night of October 5, 539 B.C.E., and he made known the significance of what was written on the wall. The men of Cyrus’ army were not sleeping in their encampment around Babylon’s seemingly impregnable walls. For them it was a night of great activity. In brilliant strategy Cyrus’ army engineers diverted the mighty Euphrates River from its course through the city of Babylon. Then down the riverbed the Persians moved, up over the riverbanks, to take the city by surprise through the gates along the quay. Quickly passing through the streets, killing all who resisted, they captured the palace and put Belshazzar to death. It was all over. In one night Babylon had fallen, ending centuries of Semitic supremacy; control of Babylon became Aryan, and Jehovah’s word of prophecy was fulfilled.—Isa 44:27; 45:1, 2; Jer 50:38; 51:30-32; see PICTURE, Vol. 2, p. 325; CYRUS.

As the influence of the Chaldeans spread northward, the whole territory of Babylonia became known as “the land of the Chaldeans.” Isaiah in his prophecies anticipated this Chaldean rise to power and their subsequent fall. (Isa 13:19; 23:13; 47:1, 5; 48:14, 20) Particularly was this domination manifest during the seventh and sixth centuries B.C.E. when Nabopolassar, a native of Chaldea, and his successors, Nebuchadnezzar II, Evil-merodach (Awil-Marduk), Neriglissar, Labashi-Marduk, Nabonidus, and Belshazzar, ruled the Third World Power, Babylon. (2Ki 24:1, 2; 2Ch 36:17; Ezr 5:12; Jer 21:4, 9; 25:12; 32:4; 43:3; 50:1; Eze 1:3; Hab 1:6) That dynasty came to its end when “Belshazzar the Chaldean king was killed.”

The Watch Tower Society almost completely ignores Jeremiah 25:12. It pretends that the passage does not exist. It claims that the 70 years ended, not when Babylon was conquered, but two years later when the Jews arrived back in Judah.

But a second biblical witness, 2 Chronicles 36:20, says that after Nebuchadnezzar destroyed Jerusalem he:

carried off those remaining from the sword captive to Babylon, and **they came to be servants to him and his sons until the royalty of Persia began to reign.**

This is entirely in line with the above-quoted Jeremiah 27:7:

And **all the nations must serve even him and his son and his grandson until** the time even of his own land comes.

So the Jews were captive to Nebuchadnezzar’s dynasty in Babylon **until** that dynasty came to an end when Babylon was conquered and the “royalty of Persia began to reign” in the person of Cyrus the Great. Thus “the 70 years” of servitude to Babylon by Judah and the nations round about ended in October 539 BCE when Babylon’s rule ended and was replaced by Persian rule under Cyrus.

Thus the end of “the 70 years” is established “at the mouth of” two biblical witnesses: Jeremiah and 2 Chronicles.

Another important consideration is Jeremiah 29:10. In the *American Standard Version* (almost all modern Bible translations other than those that follow the *King James Version* read similarly) this reads:

For thus saith Jehovah, After seventy years are accomplished for Babylon, I will visit you, and perform my good word toward you, in causing you to return to this place.

This passage does two things: it clearly states that the 70 years were **for**, or **with reference to Babylon’s supremacy**, and it confirms that **after the 70 years were completed**, as described in Jeremiah 25:8-12, God would cause the Jews to return to Judah. This means that “the desolation of

Judah” mentioned or alluded to in various Bible passages ended *after* the 70 years of servitude to Babylon ended.

The Society disagrees with the Bible about the end of the 70 years. It claims that, because the 70 years were years of desolation of Judah, they ended only when the Jews returned to Judah. It also claims that “the 70 years” were an *exact* period, virtually down to the day. Inconsistently, it also claims that the 70 years were the period when the Jews were in exile, or captive, **in** Babylon. But this cannot be, since the round trip travel time between Judah and Babylon was about eight months, so that if the 70 years were the to-the-day period of desolation of Judah, the Jews were captive **in** Babylon for only 69 years and 4 months.

Moving on with the *Kingdom Come* book:

26 Daniel himself lived in Babylonian exile for many years. On the night that Babylon fell to the Medo-Persians, he was an eyewitness to the fulfillment of his own prophecy, and of other prophecies, against that city. (Daniel 5:17, 25-30; Isaiah 45:1, 2) Historians calculate that Babylon fell in early October of the year 539 B.C.E. Soon thereafter, Daniel discerned from Jeremiah’s prophecy that the 70-year captivity and desolation for Jerusalem was about ended. (Daniel 9:2) And he was right!

Note that the statement that Jeremiah’s prophecy was about “the 70-year captivity” is false, given the considerations discussed above. The prophecy was about Babylonian supremacy over the Near East.

This claim of “about ended” is another piece of special pleading and lying to the reader. A careful reading of a good Bible translation—but better, a good Hebrew interlinear translation—shows that Daniel 9 does not say that “the 70 years” were “*about* ended”. Nor does it say they *had* ended, or were *about to* end. Rather, it leaves it up to the reader to decipher what was meant from the context. The 1984 *New World Translation* turns out to be a faithful translation of the Hebrew of Daniel 9:1-2:

In the first year of Da·ri·us the son of A·has·u·e·rus of the seed of the Medes, who had been made king over the kingdom of the Chal·de·ans; 2 in the first year of his reigning I myself, Daniel, discerned by the books the number of the years concerning which the word of Jehovah had occurred to Jeremiah the prophet, for fulfilling the devastations of Jerusalem, [namely,] seventy years.

Because Darius the Mede was now king of the Chaldeans, or Babylonia, the time frame must be *after* Babylon was conquered by the Medes and Persians in October 539 BCE. Thus, according to the above discussion, **“the 70 years” had been completed.** So what Daniel said was that, now that “the 70 years” had been fulfilled, he “discerned by the books” that the number of years for the fulfilling of “the devastations of Jerusalem” were 70. This is an obvious reference back primarily to Jeremiah 29:10, as quoted above, and secondarily to Jeremiah 25:8-12. So Daniel concluded that Jeremiah’s words about calling to account against the king of Babylon had come true, and therefore that Jeremiah’s words (29:10) that “after seventy years are accomplished for Babylon, I will visit you, and perform my good word toward you, in causing you to return to this place”, were about to come true. Verses 9:3-19 tell what Daniel did next, in harmony with Jeremiah 29:10:

3 And I proceeded to set my face to Jehovah the [true] God, in order to seek [him] with prayer and with entreaties, with fasting and sackcloth and ashes. 4 And I began to pray to Jehovah my God and to make confession and to say ... 16 O Jehovah, according to all your acts of righteousness, please, may your anger and your rage turn back from your city Jerusalem ... Jerusalem and your people are an object of reproach to all those round about us. 17 And now listen, O our God, to the prayer of your servant and to his entreaties, and cause your face to shine upon your sanctuary that is desolated ... Do open your eyes and see our desolated conditions and the city that has been called by your name ... 19 O Jehovah, do hear. O Jehovah, do forgive. O Jehovah, do pay

attention and act. Do not delay, for your own sake, O my God, for your own name has been called upon your city and upon your people.

Following Watch Tower tradition and completely ignoring the above considerations, the *Kingdom Come* book continues:

In the first year of Cyrus the Persian, which most historians date from the spring of 538 B.C.E., Cyrus issued a decree permitting the Jews to return to their homeland to repopulate it and to rebuild Jehovah's temple there. (2 Chronicles 36:20-23; Ezra 1:1-5) The inspired historical account tells us that the Jews responded readily to Cyrus' decree, so that "when the seventh month arrived the sons of Israel were in their cities." (Ezra 3:1) By our calendar that would be October, 537 B.C.E., which date therefore marks the completion of the foretold 70 years of desolation.

Again we see the claim of Watch Tower tradition that the 70 years ended with the Jews' arrival back in Judah, rather than, as the Bible actually says, with the conquering of Babylon by Cyrus.

With its unscriptural narrative in hand, *Kingdom Come* continues:

27 That historical information is important to us in determining the beginning of "the appointed times of the nations." Since the 70 years of desolation for Judah and Jerusalem ended in 537 B.C.E., they began in 607 B.C.E. That would be the year when Zedekiah ceased to sit upon the "throne of the kingship of Jehovah" in Jerusalem. It therefore marks also the date for the beginning of the Gentile Times. Counting from October 607 B.C.E., the "seven times" of 2,520 years bring us down to early October 1914 C.E., when, as we have already seen, Jesus' great prophecy on "the conclusion of the system of things" started to be fulfilled.

By now the reader should be able to see why every one of the above statements is either demonstrably wrong, or without real evidence.

Consider once again David Splane's opening statement in the JW Broadcasting video:

Splane 1:42: "This month I'd like to talk about the efforts Jehovah's organization is making to produce literature, publications, articles, that are as accurate as possible. We're going to talk about accuracy, accuracy of statement."

In view of the evidence presented above, that Watch Tower chronology and the traditions and doctrines associated with it are wrong and that the Watch Tower Society has blatantly lied about many of its claims, is Splane's claim of accuracy in Watch Tower publications correct? The answer is obvious. Once again I refer Watch Tower personnel to Job 13:7:

Are you defending God with lies? Do you make your dishonest arguments for his sake?

Scriptural Proof That the 1914 Doctrine Is Wrong

Since 1923 the Watch Tower Society has taught that various physical events—earthquakes, famine, pestilence and war—became much worse after 1914 compared to all earlier times. It has traditionally claimed that these disasters have been much "worse" in various senses, i.e., that in contrast to earlier times the post-1914 world has seen *all* of them occur within "the generation of 1914" and that each of them has been "worse" in terms of intensity, number of people killed, and so forth. Since the late 1980s to early 1990s the Society has largely backed off on these claims, retreating to the lame rationalization that "Jesus predicted earthquakes, etc., for the last days; we see earthquakes, etc., since 1914; this is proof that the last days began in 1914." But every generation prior to 1914 saw *all* these disasters, often in greater measure than the post-1914 generations, so in terms of the physical facts about those disasters there is nothing special to distinguish post-1914 generations from pre-1914 generations. See page 270 for much more on this.

The Society bases its claims about these post-1914 disasters on its current narratives on Matthew 24, Mark 13 and Luke 21. These narratives say that Jesus mentioned earthquakes, famine, pestilence and war in connection with his prophecy about the coming destruction of Jerusalem and the end of the Jewish world. The Society claims that when Jesus' disciples asked him for a sign about this destruction and end, he foretold a fulfillment beyond the 1st century, and said that these disasters would comprise a "composite sign" that would be prominently evident in connection with his "invisible presence" that would begin in 1914. So the Society claims that Jesus' words applied not just to the 1st century CE (Jerusalem and its Temple were destroyed in 70 CE; this is claimed as the 1st fulfillment of Jesus' prophecy) but to the future when a 2nd fulfillment of Jesus' prophecy was to come along beginning in 1914.

These post-1923 Watch Tower claims are a complete turnabout from C. T. Russell's teachings on the meanings of Matthew 24, Mark 13 and Luke 21. He taught that Jesus predicted a future "presence" (Greek *parousia* as used in Matthew 24:3) that would come long after the 1st century. He taught that this special period began in 1874 and was the beginning of a 40-year "harvest" that would culminate in 1914 with the destruction of all the nations by Jesus' installing his Kingdom government in their place. He also taught that "the time of the end" was a different period that began in 1799 and would end in 1914,⁵⁷² whereas current Watch Tower teaching is that it began in 1914 and will end with the soon-to-begin battle of Armageddon. Many of Russell's followers accepted the common misunderstanding that Jesus predicted earthquakes, etc., as part of this *parousia*, but Russell corrected them. In an article in an 1884 *Zion's Watch Tower* he said:⁵⁷³

Now consider the subject of the signs of the times. Remarks on this subject are too often made which betray a want of intelligent comprehension of the nature of the signs that are according to Scripture to indicate the "time of the end." A careless reading of our Lord's prophetic discourse on the Mount of Olives seems to be the cause of much of this misapprehension. His predictions of wars and rumors of wars, famines, pestilences, and earthquakes, are quoted as if they and such like things were to be the signs of the end of the age. A little accurate attention to the order of his statements would at once show that, so far from this being the case, he mentions these as the characteristic and common events of the entire interval prior to his coming. Wars and calamities, persecution and apostasy, martyrdom, treachery, abounding iniquity, Gospel preaching, the fall of Jerusalem, the great tribulation of Israel, which has, as we know, extended over 1,800 years; all these things were to fill the interval, not to be signs of the immediate proximity of the second advent. How could things of common, constant occurrence be in themselves signs of any uncommon and unique crisis?

What commoner all through the ages than wars and rumors of wars, famines, pestilences, and earthquakes? These, as marking the course of the age, can never indicate its close...

No, there was nothing special to alarm the antediluvians before the day that Noah entered into the ark; nothing special to startle the men of Sodom ere the fire from heaven fell; and like as it was in those days, so will it be in these. All going on just as usual, no single sign to attract the world's attention. "None of the wicked shall understand" the true state of affairs, only the "wise" enlightened by the word of prophecy.

In other words, Russell taught that physical signs such as earthquakes were not "signs of the end" but were just the common occurrences of the previous 1,800 years of human history, and that "the end" could be known only via prophecy, i.e., Russell's *interpretations* of prophecy where he predicted 1914 as the end of "the times of the Gentiles" and the beginning of the visible operation of Christ's Kingdom government.

In answer to a reader's question, Russell said the following:⁵⁷⁴

⁵⁷² <https://critiquesonthewatchtower.org/old-articles/2006/02/part-2-statements-concerning-1799-1874.html>

⁵⁷³ *Zion's Watch Tower*, September, 1884, p. 3; p. 661 Reprints.

⁵⁷⁴ *Zion's Watch Tower*, March, 1884, p. 7; p. 605 Reprints

Does Matt. 24:6 teach that “Wars and rumors of wars” are a sign of the end of the Gospel Age?

A. No; we think not. Wars and rumors of wars have characterized earth’s history, with varying frequency and cruelty, ever since the fall of man. But the Scriptures assure us that the time of the end of the Gospel Age, or end of the dominion of the “prince of this world,” will witness a more general and widespread warfare than was ever known before, involving all the powers of earth...

So also famines and pestilences and earthquakes are not to be regarded specially as signs of the end. Though they will doubtless be frequent, and perhaps more so in the time of the end, like wars have been a part of Satan’s policy from the first.

Of course, as shown below (see page 270), nothing out of the ordinary with respect to these disasters has occurred since 1914.

One of Russell’s contemporaries had the same view as Russell on such claims about “signs of the end”. In a pamphlet titled *The Second Coming of Christ* a Seventh-Day Adventist commentator, explaining Matthew 24:6-8, wrote:⁵⁷⁵

Mark this: Our Lord does not mention wars, famines, pestilences, and earthquakes as signs of His second advent, but rather as events of common occurrence all the way through the Christian age, which must exist before the end. And history attests the fact that these calamities have covered at least seventeen centuries.

The fact that Russell’s statements were correct about Jesus’ not predicting disasters as signs of the imminent approach of his “second advent” is easy enough to see if one does not read the relevant Gospel accounts with eyes biased by years of wrong and all-too-common Christian training.

In a nutshell, Jesus’ disciples asked him what would be the sign of his coming and of “the end of the age”. His answer was basically, “There will be no sign; you’ll know the end is upon you when I show up and not before. Don’t interpret things like war, famine, pestilence and earthquakes as signs.”

Luke’s Account

Given that understanding, let’s examine Luke 21:5-28 and see if the text jibes with it. From the *English Standard Version (ESV)*:

Jesus Foretells Destruction of the Temple

5 And while some were speaking of the temple, how it was adorned with noble stones and offerings, he said, 6 “As for these things that you see, the days will come when there will not be left here one stone upon another that will not be thrown down.” 7 And they asked him, “Teacher, when will these things be, and what will be the sign when these things are **about to take place?**” 8 And he said, “See that you are not led astray. For many will come in my name, saying, ‘I am he!’ and, ‘The time is at hand!’ Do not go after them. 9 And when you hear of wars and tumults, do not be terrified, for these things must first take place, but the end will not be at once.”

Jesus Foretells Wars and Persecution

10 Then he said to them, “Nation will rise against nation, and kingdom against kingdom. 11 There will be great earthquakes, and in various places famines and pestilences. And there will be terrors and great signs from heaven. 12 But before all this they will lay their hands on you and persecute you, delivering you up to the synagogues and prisons, and you will be brought before kings and governors for my name’s sake...

Jesus Foretells Destruction of Jerusalem

20 “But when you see Jerusalem surrounded by armies, then know that its desolation **has come near**. 21 Then let those who are in Judea flee to the mountains, and let those who are inside the city depart, and let not those who are out in the country enter it, 22 for these are days of vengeance, to fulfill all that is written...

The Coming of the Son of Man

25 “And there will be signs in sun and moon and stars, and on the earth distress of nations in perplexity because of the roaring of the sea and the waves, 26 people fainting with fear and with foreboding of what is coming on

⁵⁷⁵ Eld. James White, *The Second Coming of Christ: or a Brief Exposition of Matthew Twenty-Four*, pp. 11-12.

the world. For the powers of the heavens will be shaken. 27 And then they will see the Son of Man coming in a cloud with power and great glory. 28 Now when these things begin to take place, straighten up and raise your heads, because your redemption is drawing near.”

Note some important points:

Verse 7: The disciples ask, “what will be the sign when these things **are about to take** place?” They did not ask, “what will be the sign when these things **are taking** place?” The second question would be nonsensical, because if “these things are taking place”, no one would need a sign of it: the events themselves would be the ‘sign’—which would be a nonsensical term.

*A Translator’s Handbook on the Gospel of Luke*⁵⁷⁶ comments:

ti to semeion hotan melle tauta ginesthai ‘what will be the sign when these things **are about** to happen?’, with *estai* understood. The underlying idea is that events due to divine intervention are announced by a sign. To know the sign means to know that the events **are about** to happen...

Translation: *They*, or, ‘his disciples/followers’.

The sign when (or, that) *this is about to take place*, or more explicitly, ‘the sign which will show that this **is about (or, that the time has come for this) to happen**’ (cp. TEV).

The *TEV* (*Today’s English Version*; aka *Good News Translation*; *GNT*) reads:

what will happen in order to show that **the time has come for it to take place?**

Verses 8-12: Jesus did not answer, “Here are the signs: ...” Rather, he said, “See that you are not led astray.” Then he listed things not to be led astray by: people falsely coming in his name, people saying that the time is at hand, wars and tumults, nation rising against nation, great earthquakes, famines, pestilences, terrors and great signs from heaven (obviously these would be false signs).

Verse 8: Jesus warns against listening to false Christs or false Messiahs, or those who come in his name claiming to be someone important, someone who represents him, someone who says “I am he!” He also warns against someone who comes in his name and says “The time is at hand!”⁵⁷⁷ Because the leaders of Jehovah’s Witnesses perfectly fit those descriptions, Christians must obey Jesus’ command: “Do not go after them.” This is another direct proof that the Watch Tower’s 1914 doctrine is wrong and that JW leaders know it.

Verse 20: This is the first mention of a specific event occurring in advance of a main event: Jerusalem being surrounded by armies in advance of its desolation.

Verses 25-28: The appearance of unspecified “signs in sun and moon and stars ...” Finally the main event: “they will see the Son of Man coming in a cloud with power and great glory.”

What these passages say is perfectly in line with C. T. Russell’s comments about them and entirely at odds with current Watch Tower doctrine.

⁵⁷⁶ J. Reiling and J. L. Swellengrebel, *A Translator’s Handbook on the Gospel of Luke*, p. 662.

⁵⁷⁷ *The Watchtower*, November 1, 1964, pp. 645-646: “To his first-century disciples Jesus sounded a warning that applies to us today with even greater force: “Look out that you are not misled; for many will come on the basis of my name, saying, ‘I am he [Christ],’ and, ‘The due time has approached.’ Do not go after them.” (Luke 21:8) ... The combined testimony of these faithful witnesses pointed to danger from within the ranks of professed Christians. The peril would be not so much from the openly avowed opponents of Christ as from **those who would rise up claiming to be Christ or claiming to exercise the rights and prerogatives of Christ as his empowered representatives**. Disarmed by an outward show of godliness and by “smooth talk and complimentary speech,” many unwary Christians would be seduced into following ‘wolves in sheep’s covering’ and eventually becoming prey to such selfish deceivers.—Rom. 16:18.”

Mark's Account

Now let's look at the relevant parallel passages from Mark 13:3-27 from a similar perspective. Again from the *ESV*:

Signs of the End of the Age

3 And as he sat on the Mount of Olives opposite the temple, Peter and James and John and Andrew asked him privately, 4 "Tell us, when will these things be, and what will be the sign when all these things are **about to be accomplished**?" 5 And Jesus began to say to them, "See that no one leads you astray. 6 Many will come in my name, saying, 'I am he!' and they will lead many astray. 7 And when you hear of wars and rumors of wars, do not be alarmed. This must take place, but the end is not yet. 8 **For** nation will rise against nation, and kingdom against kingdom. There will be earthquakes in various places; there will be famines. These are but the beginning of the birth pains...

The Abomination of Desolation

14 "But when you see the abomination of desolation standing where he ought not to be (let the reader understand), then let those who are in Judea flee to the mountains...

The Coming of the Son of Man

24 "But in those days, after that tribulation, the sun will be darkened, and the moon will not give its light, 25 and the stars will be falling from heaven, and the powers in the heavens will be shaken. 26 And then they will see the Son of Man coming in clouds with great power and glory...

Verse 4 says the same as Luke 21:7: "what will be the sign when all these things are **about to be accomplished**?"

*A Handbook on The Gospel of Mark*⁵⁷⁸ comments:

semeion (cf. 8:11) 'sign': here in the sense of a 'token' or 'indication' pointing to the events referred to. In this context the 'sign' asked for would be an indication that **the events were about to take place**.

hotan melle tauta sunteleisthai panta 'when all these things are about to be accomplished'.

hotan (cf. 11:19) 'when': indicates one single event.

mello (cf. 10:32) 'about to be', 'on the point of' (cf. Arndt & Gingrich 1.c.α).

sunteleo (only here in Mark) 'to fulfil', 'accomplish': the meaning 'come to an end' is suggested as possible here by Arndt & Gingrich 1.

This reference's comment on Mark 8:11 (per above) says:⁵⁷⁹

semeion (8:12, 14, 13:4, 22, 16:17, 20) 'sign', i.e. 'an outward (visible) indication of secret power or truth' (Souter): in this context the 'sign' would be a wonder or miracle clearly of divine origin (*apo tou ouranou* 'from heaven').

The *TEV* reads:

what will happen to show that **the time has come** for all these things to take place.

Verses 5-8 say the same as Luke 21:8-12: "See that no one leads you astray..." No mention of a sign, but only of things not to be led astray by.

Verse 8 contains the important word "for", which signifies "this is the reason you should not be led astray". Verses 5-8 again: "See that no one leads you astray ... do not be alarmed ... the end is not yet ... **For** nation will rise against nation ... These are but the beginning of the birth pains..." This is an

⁵⁷⁸ Robert G. Bratcher and Eugene A. Nida, *A Handbook on The Gospel of Mark*, 1961, pp. 397-398.

⁵⁷⁹ Bratcher 1961, p. 250.

explicit warning for the disciples not to be misled by the commonly preached signs of Jewish apocalypticism such as wars, earthquakes, etc.

Verse 14: Same as Luke 21:20.

Verses 24-27: Similar to Luke 21:25-28.

So now we have two Gospel accounts that tell Jesus' followers not to interpret various disasters as "signs of the times".

Matthew's Account

Let's look at the parallel account in Matthew 24:3-31 (*ESV*):

Signs of the End of the Age

3 As he sat on the Mount of Olives, the disciples came to him privately, saying, "Tell us, when will these things be, and what will be the sign of your *coming* and of the end of the age?" 4 And Jesus answered them, "See that no one leads you astray. 5 For many will come in my name, saying, 'I am the Christ,' and they will lead many astray. 6 And you will hear of wars and rumors of wars. See that you are not alarmed, for this must take place, but the end is not yet. 7 For nation will rise against nation, and kingdom against kingdom, and there will be famines and earthquakes in various places. 8 All these are but the beginning of the birth pains..."

The Coming of the Son of Man

29 "Immediately after the tribulation of those days the sun will be darkened, and the moon will not give its light, and the stars will fall from heaven, and the powers of the heavens will be shaken. 30 Then will appear in heaven the sign of the Son of Man, and then all the tribes of the earth will mourn, and they will see the Son of Man coming on the clouds of heaven with power and great glory..."

Verse 3 is an instance where the Watch Tower Society ignores all outside scholarship and translates the Greek *parousia* as "presence" rather than the correct "coming". See below for more on this. The verse says pretty much the same as the parallels in Luke and Mark: "what will be the sign of your coming ..." to accomplish all the things you just spoke about? Obviously this question must have the same sense as in Luke and Mark: "what will be the sign that you **are about to come**?" Again the question is nonsensical if understood to mean "what will be the sign that you **are here** (*have come, are present*)?"

*A Handbook on The Gospel of Matthew*⁵⁸⁰ comments:

Matthew, even more emphatically than Mark (13.4), divides the response of the disciples into two distinct questions: (1) **when will this be**, and (2) **what will be the sign of your coming and of the close of the age?** The first of the two questions relates to the destruction of Jerusalem, which is a historical event that may be predicted with relative certainty by the observation of other events. It receives an answer in verses 15-28 and 32-35. But the second question concerns a happening that is not one in a series of cause-and-effect events. It speaks of an act of God, a divine intervention into history that comes suddenly and without warning. Therefore it cannot be predicted or determined by anything that takes place in the course of human events. Consequently the time of its occurrence is within the knowledge of God alone (verses 29-31, 36). Therefore the only answer to this question can be: cease all speculation, faithfully perform your tasks as disciples, and be ready at any moment (verses 37-44). Although the disciples may be interested in predicting the events that accompany the end of history, Jesus' sole concern is that his followers correctly fulfill their role as disciples. That is why he gives them a stern warning accompanied by an exhortation (verses 4-14) before proceeding to answer the two questions...

So now we have *three* Gospel accounts that tell Jesus' followers not to interpret various disasters as "signs of the times". *A Handbook on The Gospel of Matthew* clearly states that verses 4-14 perform this task.

⁵⁸⁰ Barclay M. Newman and Philip C. Stine, *A Handbook on The Gospel of Matthew*, 1988, p. 732.

Having explained the overall import of Matthew 24, the *Handbook* continues:

Among the Gospel writers only Matthew uses the noun **coming** of Jesus' coming into power and glory, and in his Gospel it is confined to this chapter (verses 3,27,37,39). In the world of the New Testament, the Greek noun for **coming** was a technical term used of official visits by royalty, and it literally meant "presence" or "appearance." For Paul and writers of other New Testament letters, the noun is used specifically of Jesus' coming in glory (1 Cor 15.23; 1 Thes 2.19; 3.13; 4.15; 5.23; 2 Thes 2.1,8,9; James 5.7,8; 2 Peter 1.16; 3.4,12; 1 John 2.28). To translate **your coming** as "your return" (LB) is to transgress the boundaries of valid translation; whereas the Greek word connotes a glorious or victorious manifestation (not necessarily on earth!), the English word "return" conveys a totally different picture.

To retain **coming** does pose a problem for translators in languages where an event is not normally expressed as a noun. They can use a sentence such as "What things will happen to show **that it is time for you to come**" or "... **that now you will come.**" In some languages "appear" is used.

Jesus' coming or appearance will mark the **close of the age**, or the end of history as we know it. It means much more, therefore, than the destruction of the world. If it means nothing to say "the end of this age" (the most common translation) or "the end of history," translators may say "the end of time" or "the end of the world" (but not "the destruction of the world").

Verses 4-8: Similar to Mark 13:5-8.

*A Handbook on The Gospel of Matthew*⁵⁸¹ comments on verses 7-8:

[vs. 7] Another traditional conviction of apocalyptic authors is that international wars and natural disasters (**famines and earthquakes**) will all take place immediately prior to the end of history. But **Matthew corrects this belief by indicating that these are all part of the natural course of history and are in no way to be looked upon as indicators of the end of time** (see verses 6b,8).

[vs. 8] **All this** refers to the natural disasters and wars that will be happening all over the world. Translators can say "all these things" or "all these events." The function of this verse is to turn the Christian community away from empty speculation regarding the end. **At the most, the presence of wars, famines, and earthquakes may be compared to the first pains of childbirth and are not to inspire anxious predictions and details of coming events.**

Verse 30: Unlike the parallel passages in Luke and Mark, this explicitly mentions a sign: "Then will appear in heaven the sign of the Son of Man". What this sign is, is not specified, but whatever it is, upon seeing it, "all the tribes of the earth will mourn". But this "sign" does not signal that "the Son of Man" will appear at some fuzzy future time, such as with the fuzzy period between 1914 and the point at which the battle of Armageddon begins, but that he is **about to appear**, so close that for all practical purposes he is **near to appearing immediately on the heels of the "sign"**, "coming on the clouds of heaven with power and great glory."

In view of the above rather obvious understanding of the accounts in Matthew, Mark and Luke that bear on Jesus "second advent", as Russell put it, it is obvious that the Watch Tower Society's claim that Jesus predicted earthquakes, etc., for the last days is simply false. Because such disasters have been the common lot of humankind since time immemorial, their continuing at more or less the same rate and intensity since 1914 (as the Society has admitted) cannot be a sign of anything. In particular they cannot be a sign of anything to do with 1914.⁵⁸²

⁵⁸¹ Newman 1988, p. 735.

⁵⁸² For a more extensive discussion see <https://critiquesonthewatchtower.org/old-articles/2006/02/part-4-more-unassailable-proofs.html>

Especially see Carl Olof Jonsson and Wolfgang Herbst, *The Sign of the Last Days: When?*

Over the last 140+ years the Watch Tower Society and its prophetic forebears have expended much effort to prove that the translation of the Greek *parousia* in Matthew 24:3 must be “presence” rather than coming. We will now take a brief look at this issue.⁵⁸³

***Parousia*—Presence or Coming?**

The Watch Tower Society has taught since its inception that Christ’s return was invisible. At first it taught that this return had occurred in 1874. Somewhere between about 1931 and 1943 the Society dropped that date in favor of 1914. The Society’s teaching of an invisible return is mainly based on its translation of the Greek word *parousia* in Matthew 24:3, which it says should be rendered exclusively as “presence” rather than the more common “coming” or “advent”.

The idea of an invisible return of Christ can be traced back at least as far as the “two-stage coming” or “secret rapture” theory originated in the late 1820s by the well-known London banker and Bible expositor Henry Drummond, who was one of the founders of Edward Irving’s *Catholic Apostolic Church*. Drummond’s theory was adopted by other prophetic expositors, including John Nelson Darby, the founder of the *Plymouth Brethren* and father of Dispensationalism. This school of thought became prominent among British and American millenarians in the 1840s, and eventually “constituted one of the most significant elements in the history of Fundamentalism”.⁵⁸⁴

Dispensationalists hold that Christ’s return, or second coming, will begin with a “secret rapture” in which the church, the “the members of the body of Christ, both living and dead, will be caught away to dwell with Christ in heaven”.⁵⁸⁵ This first stage of Christ’s return will be invisible to the rest of mankind. The second stage will be a spectacular revelation or public advent as described in Matthew 24:30 and the book of Revelation. Christ will be invisibly present “in the air” between the two stages. Dispensationalists argue that Jesus’ disciples, in Matthew 24:3, referred to this “invisible presence” when they asked Jesus for a sign of his *parousia*.⁵⁸⁶

The idea of an invisible return caught on among the followers of the Second Adventist Nelson Barbour shortly after Barbour’s predictions that Christ would return in 1873 and 1874 failed.⁵⁸⁷ To salvage the prediction, they seized on the fact that the Greek word *parousia*, used in Matthew 24:3 and usually translated as “coming”, could also be translated as “presence”. They found such a rendering in

⁵⁸³ For an extended discussion and disproof of the Society’s teaching, based on the August 15, 1996 *Watchtower*, see <https://critiquesonthewatchtower.org/new-articles/2019/02/parousia.pdf>

Also <https://corior.blogspot.com/2006/02/part-3-unassailable-proofs.html>

⁵⁸⁴ Ernest R. Sandeen, *The Roots of Fundamentalism: British and American Millenarianism 1800–1930*, p. 61.

⁵⁸⁵ Sandeen, p. 62

⁵⁸⁶ The Greek word *parousia* can mean “presence”, “coming”, “arrival”, “advent”, “appearing”, “return”.

⁵⁸⁷ By 1870 Barbour was predicting that Christ would return in 1873; when that failed he revised it to 1874. See Nelson H. Barbour, *Evidences for the Coming of the Lord in 1873; or the Midnight Cry*, Rochester, N.Y.: 1870, 1871; Carl Olof Jonsson, *The Gentile Times Reconsidered*, 4th edition, pp. 44-45; M. James Penton, *Apocalypse Delayed: The Story of Jehovah’s Witnesses*, 3rd edition, p. 27; Bruce W. Schulz and Rachael De Vienne, *Nelson Barbour: The Millennium’s Forgotten Prophet: A Preliminary Biography*, pp. 45, 50-51.

As early as 1859 Barbour was expecting Christ’s return in 1873, but held off on publishing his expectation until 1870 (Schulz & De Vienne, p. 79). Other expositors were also expecting that Jesus would return in 1873. Jonas Wendell, who later influenced some of C. T. Russell’s ideas, was one. In *SUPPLEMENT TO Zion’s Watch Tower, And “Herald of Christ’s Presence.”* (PITTSBURGH, PA., JULY 1, 1879) Russell wrote: “I have been a Bible student since I first had my attention called to the second coming of our Lord, by Jonas Wendel, a Second Advent Preacher, about 1869, who was then preaching *the burning of the world* as being due in 1873.” Russell’s mention of “about 1869” likely means 1869 or 1870, as Wendell apparently borrowed the 1873 idea from Barbour’s 1869-1870 preaching, and perhaps from the 1870 version of *Evidences for the Coming of the Lord in 1873* (Schulz & De Vienne, p. 45).

Benjamin Wilson's New Testament translation *The Emphatic Diaglott*, which renders the part of the verse we are concerned with as "What will be the sign of thy presence, and of the consummation of the age?" They used this idea to explain how Christ could have returned in 1874 without anyone noticing. So Barbour adopted the notion that *parousia* means "presence" to salvage his failed prediction.⁵⁸⁸ In 1876 Charles Taze Russell met up with Barbour and adopted his views on this. For the rest of his life Russell taught that Christ's invisible *parousia* or "presence" began in 1874.

The Watch Tower Society has often printed material defending its teaching that Christ returned invisibly in 1914. It has supported this by arguing that *parousia* must mean "presence" in Matthew 24:3 even though most Greek scholars do not support this. For example, the August 15, 1996 *Watchtower* contains such an exposition in the article "Jesus' Coming or Jesus' Presence—Which?"⁵⁸⁹

Parousia originally meant "presence" (literally, "a being alongside") in Greek, but over the centuries took on additional shades of meaning. Words often evolve over time, such as the old English word "sod". In 1500 it meant "boil up", as in the *King James Version's* phrase "Jacob sod pottage" (Jacob boiled up some stew). But the word took on new meanings over the centuries, so that today its main meaning is "the surface of the ground covered by grass", or slang for "sodomite". To argue that the phrase "John sodded his lawn" means "John boiled up his lawn" just because it might have made sense that way to a 16th-century reader is simply stupid. Yet that is what the Watch Tower Society does with *parousia*.

It is well established today that at the time of Jesus, *parousia* was often used in a technical sense to refer to "the visit of a ruler".⁵⁹⁰ Nearly all Bible translators use "coming", "advent", "arrival" or similar terms, despite the fact the original meaning was "presence". Most early Greek-Latin translators, for whom both languages were living, used the Latin *adventus* ("advent" or "coming"). Translators for other languages used similar terms. The reason is well expressed by the 19th century scholar Adolf Deissmann, who was instrumental in collating the 19th century discoveries of ancient Greek manuscripts that showed the New Testament was written in koine or common Greek:

Yet another of the central ideas of the oldest Christian worship receives light from the new texts, viz. *parousia* [*parousia*], 'advent, coming,' a word expressive of the most ardent hopes of a St. Paul. We now may say that the best interpretation of the Primitive Christian hope of the *Parousia* is the old Advent text, 'Behold, thy *King* cometh unto thee.' [Matthew 21:5] From the Ptolemaic period down into the 2nd cent. A.D. we are able to trace the word in the East as a technical expression for the arrival or the visit of the king or the emperor. [*Light from the Ancient East*, Baker Book House, 1978, p. 368]

The point is that the technical sense embodies *both* an arrival and a subsequent presence, usually with emphasis on "arrival" but sometimes on the whole period of the ruler's visit. The arrival of Christ in Kingdom power will certainly be the "arrival or the visit of the king", and the general consensus among modern scholars is that the New Testament uses *parousia* in this way with reference to the second coming of Christ, as any modern Greek lexicon will show.

The contexts of Matthew 24, Mark 13 and Luke 21 indicate that the disciples asked for a sign *in advance* of Jesus' *visible* coming—"what will be the sign when these things are **about** to take place?" (Luke 21:7)—not of an *invisible presence* followed by a visible coming. The Sept. 15, 1964 *Watchtower* (p. 576) said the disciples "had no idea that he would rule as a glorious spirit from the heavens and therefore did not know that his second presence would be invisible." Therefore they were

⁵⁸⁸ Schulz & De Vienne, pp. 91-101.

⁵⁸⁹ For a refutation, see <https://critiquesonthewatchtower.org/new-articles/2019/02/parousia.pdf>

⁵⁹⁰ cf. <https://en.wikipedia.org/wiki/Parousia>

asking about a *visible* appearance. If they were asking about a visible appearance, they were not asking for a sign that the appearance had already taken place invisibly—for the appearance itself would be sign enough—but that it was *about* to take place. This is consistent with Jesus’ illustration of the fig tree in Matt. 24:32, 33: “Just as soon as its young branch grows tender and it puts forth leaves, you know that **summer is near** [or, “about to arrive”—not “is invisibly present”]. Likewise also you, when you see all these things, know that **he is near at the doors.**”

An extensive look at various literary and textural considerations on the meaning of *parousia* in Matthew 24:3 can be found in the essay *Scholastic Dishonesty of the Watchtower Society With Respect to Christ’s Parousia: “Presence” or “Coming”?*⁵⁹¹

It is clear the Society has no biblical textual or historical basis for claiming Jesus has been in Kingdom power since 1914, as his *parousia* or coming has not yet occurred. A careful look at the Society’s arguments over the years shows that most of them are grasping at straws, as this paper proves.

Other Scriptural Considerations

The above material shows that in Matthew 24, Mark 13 and Luke 21 Jesus gave his disciples the important information that there would be no *sign* in advance of his coming (*parousia*) in Kingdom power that would allow them to know when he was about to arrive. Rather, that sign would be the arrival itself: “Then will appear in heaven the sign of the Son of Man, and then all the tribes of the earth will mourn, and they will see the Son of Man coming on the clouds of heaven with power and great glory...” (Matt. 24:30) Clearly, that sign would be extremely visible. Because of its insistence on an “invisible presence” of Christ beginning in 1914 (originally 1874), the Watch Tower Society must claim that Jesus’ disciples were asking about an invisible sign or event that, not only did they not know about, but that in the far future only certain “elect” would understand by a special divine dispensation given to them. This “divine dispensation” is all the chronological and doctrinal hoopla that the Society has put forth that has resulted in its 1914 doctrine. In addition to the above considerations, this conflicts with direct biblical statements as shown below.

Matthew 24 gives further proof that those who claim to know when “the time of the end” has arrived or will arrive, in advance of the appearance of “the sign of the Son of Man in heaven”, are false teachers:

42 Therefore, stay awake, for **you do not know** on what day your Lord is coming ... 44 Therefore you also must be ready, for the Son of Man is coming **at an hour you do not expect.**

Obviously, anyone who claims he knows, when Jesus specifically stated that his disciples could not know, cannot honestly claim to be one of Jesus’ disciples. Luke 21:8 confirms this with the admonition, “do not follow him”.

According to many other passages in Matthew, Mark and Luke, Jesus’ coming would be absolutely unmistakable. For example, Matthew 24 states (NASB): “27 For just as the lightning comes from the east and flashes even to the west, so will the coming of the Son of Man be.” The word translated “lightning” basically means “rays of light” in Greek, so the passage could just as well read, “just as rays of light come from the east and flash to the west...”, which would well describe sunrise. In any case, both lightning and sunrise are unmistakable events, and do not need someone claiming secret knowledge, such as knowledge of an *invisible parousia*, to point out their occurrence. This again proves

⁵⁹¹ <https://critiquesonthewatchtower.org/new-articles/2019/02/parousia.pdf>

that the claim of Jehovah’s Witnesses to have special knowledge that Christ returned invisibly in 1914 is nonsense.

Matthew 24:29-30 completes the disproof of the Watch Tower’s 1914/*parousia* doctrine:

29 “Immediately after the tribulation of those days the sun will be darkened, and the moon will not give its light, and the stars will fall from heaven, and the powers of the heavens will be shaken. 30 Then will appear in heaven the sign of the Son of Man, and then all the tribes of the earth will mourn, and they will see the Son of Man coming on the clouds of heaven with power and great glory.”

So again, the sign that Jesus’ disciples asked about—that “the end” was **about** to take place—and about which Jesus corrected their ideas, was to be absolutely unmistakable.

Of course, the test of a claim that visible events happened on a certain date is simple observation: if history shows that the events did not take place, then the claim is trivially false. The Watch Tower Society’s 1914 doctrine is disproved in this way. As discussed above, the Society claims that since 1914 war, famine, pestilence, earthquakes, crime and other unpleasanties of human existence have been far worse than before. The facts show otherwise.

If these great killers were operating on a grander scale than ever before, human population would necessarily and drastically have dropped. But we see the opposite: The world’s population more than tripled in the 20th century. This alone disproves the JW’s 1914 doctrine.

A few pages below we consider some specifics concerning the supposed great increase in the historical great killers: In a nutshell: statistically, war in the 20th century killed about the same percentage of population as it did during previous centuries; famine and pestilence kill far less of a percentage of population than ever before; earthquakes kill about the same percentage of the population each year as in the preceding four centuries.

Ridiculers of Watch Tower Claims About 1914

The March 22, 1993 *Awake!* contains three articles on the topic “The World’s End—How Near?”, with the purpose of answering the Society’s critics who argue that, because of its false predictions, the Jehovah’s Witness organization is a “false prophet” in the sense of Deuteronomy 18:20-22.⁵⁹² On page 3 *Awake!* asks:

Does the failure of such predictions to come true convict as false prophets those who made them, within the meaning of Deuteronomy 18:20-22? That text reads: “The prophet who presumes to speak in my name a word that I have not commanded him to speak or who speaks in the name of other gods, that prophet must die. And in case you should say in your heart: ‘How shall we know the word that Jehovah has not spoken?’ when the prophet speaks in the name of Jehovah and the word does not occur or come true, that is the word that Jehovah did not speak.”

It is easy to show that the JW or Watch Tower organization is a “false prophet” in the sense of Deuteronomy 18 by using its own definitions and claims:

Prophet:

One through whom divine will and purpose are made known.⁵⁹³
A person who professes to proclaim a message from Jehovah God.⁵⁹⁴

⁵⁹² For a full discussion of these *Awake!* articles, see my article “The Watchtower Society and the End of the World”, <https://critiquesonthewatchtower.org/old-articles/2006/02/part-1-why-so-many-false-alarms.html>

⁵⁹³ *Insight on the Scriptures*, Vol. 2, “Prophet”, p. 694.

⁵⁹⁴ *The Watchtower*, May 15, 1930, pp.153-155.

God's prophet today:

Whom has God actually used as his prophet?... Jehovah's witnesses.⁵⁹⁵

As Jehovah revealed his truths by means of the first-century Christian congregation so he does today by means of the present-day Christian congregation. Through this agency he is having carried out prophesying on an intensified and unparalleled scale.⁵⁹⁶

There is a real need today for someone to speak as a true representative of God... was there any group on whom Jehovah would be willing to bestow the commission to speak as a "prophet" in His name, as was done toward Ezekiel...? It is of importance to every individual on earth to identify the group that Jehovah has commissioned as his "servant" or messenger.⁵⁹⁷

A third way of coming to know Jehovah God is through his representatives. In ancient times he sent prophets as his special messengers... So, does Jehovah have a prophet to help them, to warn them of dangers and to declare things to come? These questions can be answered in the affirmative. Who is this prophet? ... This "prophet" was not one man, but was a body of men and women. It was the small group of footstep followers of Jesus Christ, known at that time as International Bible Students. Today they are known as Jehovah's Christian witnesses... Of course, it is easy to say that this group acts as a "prophet" of God. It is another thing to prove it. The only way that this can be done is to review the record. What does it show? ... Thus this group of anointed followers of Jesus Christ, doing a work in Christendom paralleling Ezekiel's work among the Jews, were manifestly the modern-day Ezekiel, the "prophet" commissioned by Jehovah to declare the good news of God's Messianic kingdom and to give warning to Christendom... Jehovah's witnesses today make their declaration of the good news of the Kingdom under angelic direction and support... And since no word or work of Jehovah can fail, for he is God Almighty, the nations will see the fulfillment of what these witnesses say as directed from heaven.⁵⁹⁸

Who, then, are the group of persons who, toward the beginning of this "time of the end," were commissioned to serve as the mouthpiece and active agent of Jehovah?... Whom could the real "chariot" of Jehovah's organization roll up to and confront that He might bestow upon this qualified one the commission to speak as a prophet in the name of Jehovah?... Jehovah has found and commissioned his modern-day "Ezekiel." It is a composite Ezekiel. It is composed of those dedicated, baptized proclaimers of God's kingdom, who have been anointed with His spirit for their work... Jehovah commissioned this dedicated, baptized, anointed class of servants to speak to all the nations in His name... So it was with the anointed, dedicated witnesses of Jehovah back there in the year 1919 C.E. The facts from then on down to this date prove that they received their ordination and appointment and commission for their work in this "time of the end" from Jehovah himself.⁵⁹⁹

These faithful anointed Christians ... had to prophesy ... announcing Jehovah's judgments ... proclaiming his day of vengeance ... [they] had to preach.⁶⁰⁰

Consider, too, the fact that Jehovah's organization alone, in all the earth, is directed by God's holy spirit or active force. Only this organization functions for Jehovah's purpose and to his praise. To it alone God's Sacred Word, the Bible, is not a sealed book... How very much true Christians appreciate associating with the only organization on earth that understands the 'deep things of God.' ... How much we should appreciate God's earthly organization.⁶⁰¹

Who controls the organization, who directs it? Who is at the head? A man? A group of men? A clergy class? A pope? A hierarchy? A council? No, none of these. How is that possible? In any organization is it not necessary that there be a directing head or policy-making part that controls or guides the organization? Yes. Is the living God, Jehovah, the Director of the theocratic Christian organization? Yes!⁶⁰²

The members of spiritual Israel were looking forward to an inheritance "reserved in the heavens" for them. (1 Peter 1:3-5) But before they actually received that reward, Jehovah had a work for them to do. Concerning this,

⁵⁹⁵ *The Watchtower*, January 15, 1959, pp. 40-41.

⁵⁹⁶ *The Watchtower*, June 15, 1964, p. 365.

⁵⁹⁷ *The Watchtower*, March 15, 1972, pp. 186, 189, 190.

⁵⁹⁸ *The Watchtower*, April 1, 1972, pp. 197, 198, 200.

⁵⁹⁹ *The Nations Shall Know That I Am Jehovah*, 1971, pp. 58,59,61,66,67.

⁶⁰⁰ *Revelation—Its Grand Climax At Hand!*, 1988, p. 164.

⁶⁰¹ *The Watchtower*, July 1, 1973, p. 402.

⁶⁰² *The Watchtower*, November 1, 1956, p. 666.

he prophetically said: “I shall put my words in your mouth, and with the shadow of my hand I shall certainly cover you, in order to plant the heavens and lay the foundation of the earth and say to Zion, ‘You are my people.’” (Isaiah 51:16) He put his “words,” his message, into the mouth of his servants for them to proclaim earth wide.⁶⁰³

Obviously then, the Watch Tower Society, controlled by the Governing Body of Jehovah’s Witnesses, considers its leaders to be guided, directed, and either directly inspired or for all practical purposes inspired, by Jehovah God. It claims that its words are Jehovah’s words and that all mankind ought to obey these words as if Jehovah himself were speaking. These leaders proclaim that they speak for God, and are his direct representatives, being nothing less than God’s earthly channel of communication to mankind.⁶⁰⁴ They enforce their claimed authority by disfellowshipping for apostasy (rebellion against God) any JW who disagrees with their teachings and claims of authority. All of this defines them as a self-proclaimed, composite prophet.

Since JW leaders claim to be a prophet in the full biblical sense, if any of their teachings or predictions made in Jehovah’s name prove to be false, they are false teachers, false predictors, and therefore false prophets in the full sense of Deuteronomy 18.

Watch Tower history is full of examples of false teachings and false predictions. For example, not one visible event that C. T. Russell predicted came true, even though he called himself “God’s mouthpiece”. The same is true of J. F. Rutherford’s predictions, such as his teaching that Armageddon would come in 1925. After this failed, he was forced to admit to the Bethel Family, “I know I made an ass of myself”.⁶⁰⁵ Let’s see now: can anyone who *actually* speaks for God make an ass of himself when speaking in God’s name? Of course not. Anyone who does so obviously was not speaking for God, despite his claims to the contrary. Note that Rutherford actually claimed that angels magically put information into his brain (see page 284). For a discussion of some failed predictions, see page 284. For a discussion of some false teachings, see page 347.

The information above and below establishes that the Watch Tower Society’s claims about 1914 are false, as are other teachings and its claims to speak for God. The Society has tried to use various Bible passages to defend itself from the resulting charges that it is therefore a biblical false prophet.

One of the arguments uses 2 Peter 3:3, as explained in the above-mentioned *Awake!* article (p. 7):

“In the last days there will come ridiculers.” (2 Peter 3:3) Newspapers, newscasts, magazines, books, and movies scornfully dismiss the Bible and replace it with their own free-thinking propaganda, saying, as Peter foretold: “Where is this promised presence of his? Why, from the day our forefathers fell asleep in death, all things are continuing exactly as from creation’s beginning.”—2 Peter 3:4.

Note how C. T. Russell used the same argument to scoff at people who did not accept his 1874 date for the beginning of Christ’s presence:

The Apostle Peter describes how some of the unfaithful servants and hypocrites will scoff during the *presence* of the Lord, even as they scoffed in the days of Noah. (2 Pet. 3:3, 4, 10, 12)⁶⁰⁶

This is a silly argument. It is inherently irrefutable and therefore worthless. Why? Because it applies to any time and any situation. If in, say, the fifth century CE, a false prophet claimed that Christ was about to appear in kingdom power, and anyone denied it, he could have invoked 2 Peter 3:3 as proof

⁶⁰³ *Survival Into a New Earth*, 1984, p. 109.

⁶⁰⁴ cf. *The Watchtower*, November 15, 2009, p. 14; July 15, 2006, p. 22; March 15, 2003, p. 27; October 1, 1994, p. 8; September 1, 1991, p. 19; June 15, 1987, p. 20; December 1, 1981, p. 27.

⁶⁰⁵ *The Watchtower*, October 1, 1984, p. 24

⁶⁰⁶ *The Time Is At Hand*, 1889, p. 167.

that the kingdom was about to appear. And he would have been dead wrong. How is the situation any different with Russell's false teachings and predictions, and those of his successors?

Awake! partially misapplies the quoted scripture. 2 Peter 3:3, 4 applies to the promised *parousia* of Christ, not to everything in opposition to the Bible, and particularly not to those who ridicule the Bible itself. It hardly need be said that "newspapers, newscasts, magazines, books, and movies" are generally not the least bit concerned with Christ's *parousia*, especially as it is understood by the Watch Tower Society, and so it cannot be said they ridicule it.

In reality this scripture is devastating to the Watch Tower Society's claims. Verses 3 and 4 say: "For you know this first, that in the last days there will come ridiculers with their ridicule, proceeding according to their own desires and saying: 'Where is this promised [*parousia*] of his? Why, from the day our forefathers fell asleep [in death], all things are continuing exactly as from creation's beginning.'" The context of these verses does not dispute the idea that "all things are continuing exactly as from creation's beginning." In fact, the next few verses show that no one except Noah took notice of the judgment about to come upon the world. Why? *Because* all things were "continuing exactly as from creation's beginning." The point is that, in terms of what one observes in the world, nothing is significantly different in any time period. A Christian must always be on the watch, *because* "all things are continuing exactly as from creation's beginning."

Finally, 2 Peter 3 is clearly speaking to a *contemporary* audience, not to some who might read Peter's letter two thousand years later. The letter says, in effect, that "in *these* last days you, the recipients of this letter, will see ridiculers, etc." Jude 17 and 18 also indicate that the mocking of the coming of Christ was an attitude *already* being faced by those to whom the letter was addressed:

Call to mind the sayings that have been previously spoken by the apostles of our Lord Jesus Christ, how they used to say to you: "In the last time there will be ridiculers, proceeding according to their own desires for ungodly things." These are the ones that make separations, animalistic men, not having spirituality. But you, beloved ones, by building up yourselves on your most holy faith, and praying with holy spirit, keep yourselves in God's love, while you are waiting for the mercy of our Lord Jesus Christ.

Clearly, because of its false predictions and false teachings made in the name of Jehovah God, the Jehovah's Witness organization is a "false prophet" in the sense of Deuteronomy 18:20-22. This is proved in spades in my article *The Watchtower Society and the End of the World*.⁶⁰⁷

Empirical Proof That the 1914 Doctrine Is Wrong

How do we know that the Watch Tower Society's 1914 doctrine is wrong? By many methods, but the most important is the observation that the proof is in the pudding:

- Not one of Russell's predictions for *visible events* in 1914 based on that doctrine came true.

Russell's successors in the Watch Tower Society have been claiming since 1923 that since 1914 many mass killers of world history have occurred on an unprecedented scale: famine, pestilence, war, earthquakes. They claim that these are part of a "composite sign" of "the last days" because Jesus predicted them. But not one of these supposedly Bible-based claims for the post-1914 period is valid:

- Famine in the world has, on average, been much less severe than pre-1914.
- Pestilence in the world has, on average, been much less severe than pre-1914.

⁶⁰⁷ <https://critiquesonthewatchtower.org/old-articles/2006/02/part-1-why-so-many-false-alarms.html>

- War has been, on average, nearly the same in terms of per capita killed than pre-1914.
- Earthquake frequency and intensity have been about the same as pre-1914.⁶⁰⁸ The risk of death due to earthquakes is statistically the same as before 1914.

Had the mass killers of history claimed by the Watch Tower Society to have been operating on an unprecedentedly high level since 1914 actually been so operating, they would have been killing an unprecedentedly high percentage of world population, resulting in a massive population crash. Yet we see a massive population *explosion* beginning in the early 1800s and continuing without letup through today.

Today there are many potential severe killers on the loose: global warming, political crises, war, etc. But these do not support the Watch Tower Society's tradition about post-1914 events (e.g. famine, pestilence, war and earthquakes suddenly becoming unprecedentedly severe *beginning* in 1914). Thus, troubles in the world today are irrelevant to the Watch Tower Society's claims about events *beginning* in 1914.

An excellent reference that debunks the Society's empirical claims is Carl Olof Jonsson's *The Sign of the Last Days: When?* See also <https://www.jwfacts.com/watchtower/last-days.php>

Let us now take a look at Watch Tower claims about post-1914 calamities.

Earthquakes

As mentioned above, C. T. Russell said nothing about earthquakes becoming more severe during "the last days". It was not until 1923 that his successor as Watch Tower President, J. F. Rutherford, noted the massive 1923 earthquake that flattened Tokyo, combined it with WWI and its aftermath of the Spanish Influenza of 1917/18, and severe famine in some parts of the world due to the War, and began making the claim that these events were in fulfillment of the prophetic "signs of the times" supposedly enumerated in Matthew 24 and so forth. Eventually Watch Tower writers began claiming or implying that C. T. Russell had predicted all these things, but that is a simple lie.

Let's look at quotations showing that the Society has stated clearly that the number of earthquakes occurring each year has been much higher in the 20th century, especially since 1914.

Since 1914 earthquakes have occurred more often than ever before.—*From Paradise Lost to Paradise Regained*, 1958, p. 183.

Significantly, since 1914 there have been more major earthquakes than in any previous period of similar length in recorded history.—*The Watchtower*, October 15, 1961, p. 628.

It has been reported that the severity and deadliness of earthquakes have increased markedly since the "time of the end" commenced for this old system in 1914.—*The Watchtower*, May 1, 1970, p. 270.

Jesus foretold earthquakes in great number and magnitude as a feature of the sign of his second presence... Since 1914 C.E., and especially since 1948, there has been an increase in the number of earthquakes, especially of major ones.—*Aid to Bible Understanding*, 1971, p. 478.

The dramatic upsurge in earthquake activity since 1914 helps to prove that we are living in the time of Jesus' presence. These mighty temblors fulfill his prophecy: "There will be great earthquakes."—*Awake!*, February 22, 1977, p. 11.

Truly, earthquakes have abounded since 1914—as part of the "sign."—*The Watchtower*, January 15, 1978, p. 10.

⁶⁰⁸ The Society explicitly admits this: "the earth and its dynamic forces have more or less remained the same throughout the ages."—*The Watchtower*, December 1, 1993, p. 6. For a discussion of this statement, see <https://corior.blogspot.com/2006/02/watchtower-society-backpedals-on.html>

Has the frequency of earthquakes really increased? The Italian magazine *Il Piccolo* observed: “Our generation lives in a dangerous period of high seismic activity, as statistics show.” And then it produced figures for the past thousand years to prove it.—*Awake!*, October 8, 1980, p. 21.

From 1914 until now, there have been many more major earthquakes than in any other like period in recorded history.—*The Watchtower*, April 15, 1982, p. 9.

Jesus foretold “great earthquakes.” (Luke 21:11) Has the frequency of these really changed?... Since 1914 the yearly average of reported earthquakes has soared. There are 11 times the number that there were, on an average, annually during the 1,000 years before that date. And 20 times the annual average for the 2,000 years preceding 1914.—*Awake!*, October 22, 1984, pp. 6-7.

In comparison with the previous 2,000 years, the average per year has been 20 times as great since 1914.—*Reasoning from the Scriptures*, 1985, p. 236.

Based on available records, the 20th century does significantly overshadow the past in seismic activity. Publications of the Watch Tower Society have repeatedly called attention to this.—*The Watchtower*, January 15, 1987, p. 21.

Jesus foretold earthquakes in significant number and intensity as a feature of the sign of his presence... Since 1914 C.E., there has been an increase in the number of earthquakes, resulting in much distress.—*Insight on the Scriptures*, 1988, p. 670.

The 20th century has been a century of earthquakes.—*The Bible—God’s Word or Man’s?*, 1989, p. 141.

Of course, the Society never had any real data supporting those claims, but it had plenty of unscientific anecdotes. From the above quotes, it is evident that by 1984 the Society was claiming that since 1914 the number of earthquakes per year had been 20 times as great as before 1914. The following shows what it did to come up with that figure:

Has there actually been a significant number of major earthquakes since 1914? With data obtained from the National Geophysical Data Center in Boulder, Colorado, supplemented by a number of standard reference works, a tabulation was made in 1984 that included only earthquakes that measured 7.5 or more on the Richter scale, or that resulted in destruction of five million dollars (U.S.) or more in property, or that caused 100 or more deaths. It was calculated that there had been 856 of such earthquakes during the 2,000 years before 1914. The same tabulation showed that in just 69 years following 1914 there were 605 of such quakes. That means that, in comparison with the previous 2,000 years, the average per year has been 20 times as great since 1914.—*Reasoning*, p. 236.

It turns out that the Society performed an exercise in bias confirmation with the NGDC data by choosing criteria that ensured that its desired result was obtained. On page 6 of the above-quoted 1984 *Awake!* the following criteria appear in a box:

Earthquakes listed had to meet at least one of the following qualifications:

Magnitude	7.5 or more on the Richter scale
Deaths	100 or more
Damage	\$5 million (U.S.) or more in property destroyed

It would be hard to choose criteria more suited to skew earthquake statistics to make it appear that recent earthquakes are worse and more numerous than ones in the more distant past.

The Society fails to account for patterns of earthquake reporting. In a world with six billion people (as of 1984) there would naturally be more earthquakes reported than two thousand years earlier when the population was perhaps half a billion. And back then there were no international agencies to report to. The Pre-Columbian inhabitants of the Americas recorded no earthquakes nor did they report them to some central Native American information agency. Modern instrumental recording methods, plus the growth of modern communications, ensure that virtually all significant earthquakes are now reported to agencies like the U.S. Earthquake Information Service (was the National Geophysical Data Center).

This has been especially true since about 1900, when seismographs began to be installed worldwide. Earlier, 100 deaths were likely to be ignored on a world scale. Estimates of monetary damage are extremely poor or even meaningless the farther one goes back in time, for several reasons: dollar figures are much less likely to be reported; inflation has caused the dollar value of everything to go up; no one can give a good equivalent of the dollar value of ancient property. So the Society's figures are completely invalid.

Within a few years of 1984, author Carl Olof Jonsson had obtained from the Society the written material it had used for its 1984 study. He determined, using *fair* methods, that the NGDC data showed no significant changes, up or down, in earthquake statistics in the 20th century. About 1993 I also obtained that material and did a study of the only relatively valid measures of earthquake activity: the number of deaths due to earthquakes since about 1700, and the frequency of *massive* earthquakes recorded by instruments since they began to be used around 1900. The result? The frequency of earthquakes did not change at all in a statistically significant way during the 20th century; the likelihood of dying in an earthquake in the 18th century was about 2 ½ to 3 times higher than in the 20th century (this has proved to be wrong, since the NGDC catalog contained a number of pre-1900 quake figures that were too high; see below). Since then I have several times obtained the latest NGDC data and repeated the study, always with pretty much the same results, except for the number of pre-1900 deaths.

Note that the NGDC is constantly adding to and revising its store of recorded earthquakes. Because post-1900 reporting is quite good, very few revisions have been needed. But as one goes back in time, the reporting is increasingly bad. Not only are many earthquakes not reported, but often quake reports are duplicated or incorrect, such as the same quake being reported in different years or with a different number of deaths. For example, in the NGDC's catalogs at least through 2010, a quake was reported in Calcutta, India as killing 300,000 people in 1737, but in the 2018 catalog it was dropped because this disaster was actually a cyclone. Compared to earlier catalogs, the 2018 catalog reports about ⅓ the number of deaths in the 18th century, which of course skews earlier studies of earthquake deaths.

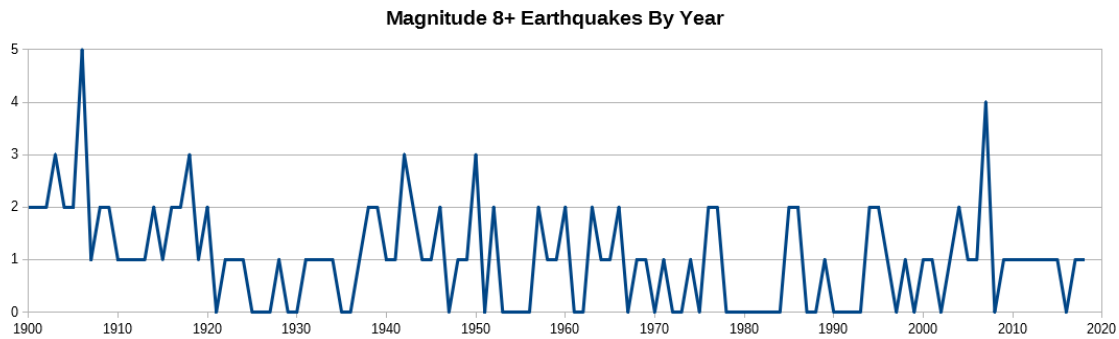
Today it is easy to obtain detailed information on earthquake statistics from the United States government. The U.S. government agency NOAA (National Oceanic and Atmospheric Administration; National Centers for Environmental Information) has extensive online information: <https://www.ngdc.noaa.gov/hazard/earthqk.shtml> . To get the latest catalog, click on the link [Global Significant Earthquake Database, 2150 B.C. to present](https://www.ngdc.noaa.gov/nndc/struts/form?t=101650&s=1&d=1) which brings you here: "Significant Earthquake Database" <https://www.ngdc.noaa.gov/nndc/struts/form?t=101650&s=1&d=1> . One can search for earthquake statistics using various criteria such as magnitude ranges and number of deaths. One can get the results in a form suitable for spreadsheets.

The following information is based on the NGDC catalog as of early November, 2018.⁶⁰⁹

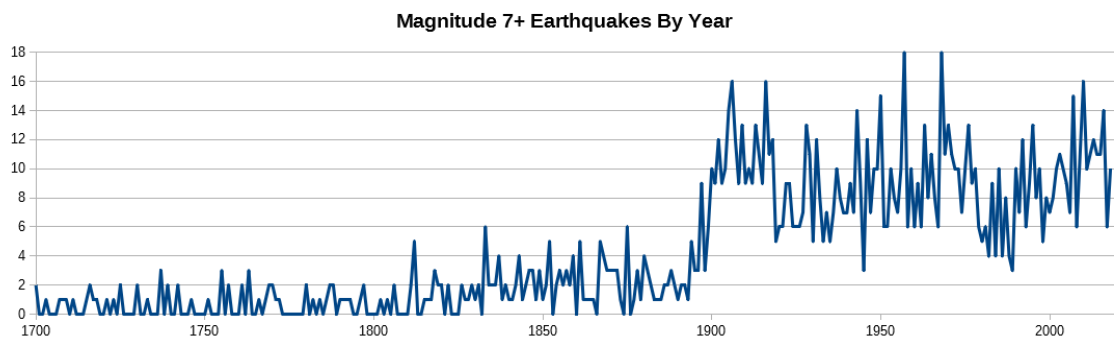
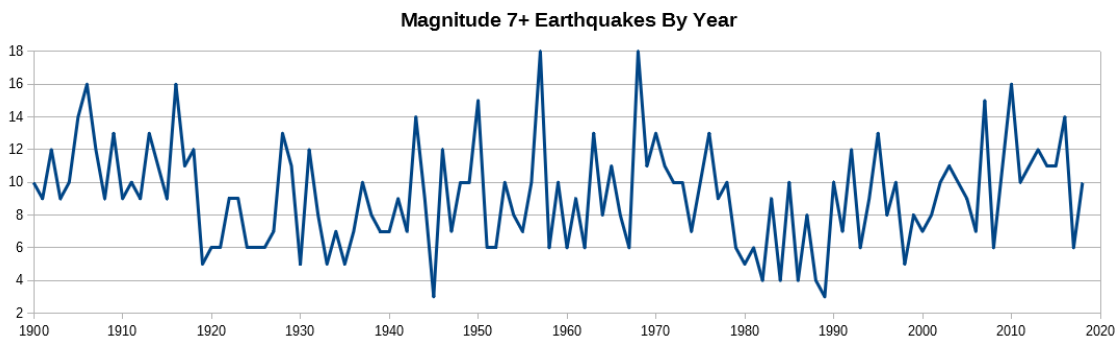
Note that the catalog contains duplicate entries, which must be removed from the spreadsheet.

The following graphs show various earthquake statistics. They show that the Watch Tower Society's claims that the magnitude and frequency of earthquakes has increased 20 times in the 20th century compared to previous centuries are grossly false. They show that its claims that far more people have been killed in the 20th century are gross distortions of reality. To the extent that pre-20th-century records can be relied on, they show that death rates are not significantly different in the 20th century compared to previous centuries. In fact, because we know that many quakes were unreported in earlier times, the death rates for earlier times would certainly be higher if the records were complete.

⁶⁰⁹ National Geophysical Data Center / World Data Service (NGDC/WDS): Significant Earthquake Database. National Geophysical Data Center, NOAA. [doi:10.7289/V5TD9V7K](https://doi.org/10.7289/V5TD9V7K)



These graphs show no statistically significant trends for the magnitudes of 8+ and 7+ earthquakes from 1900 to 2018.



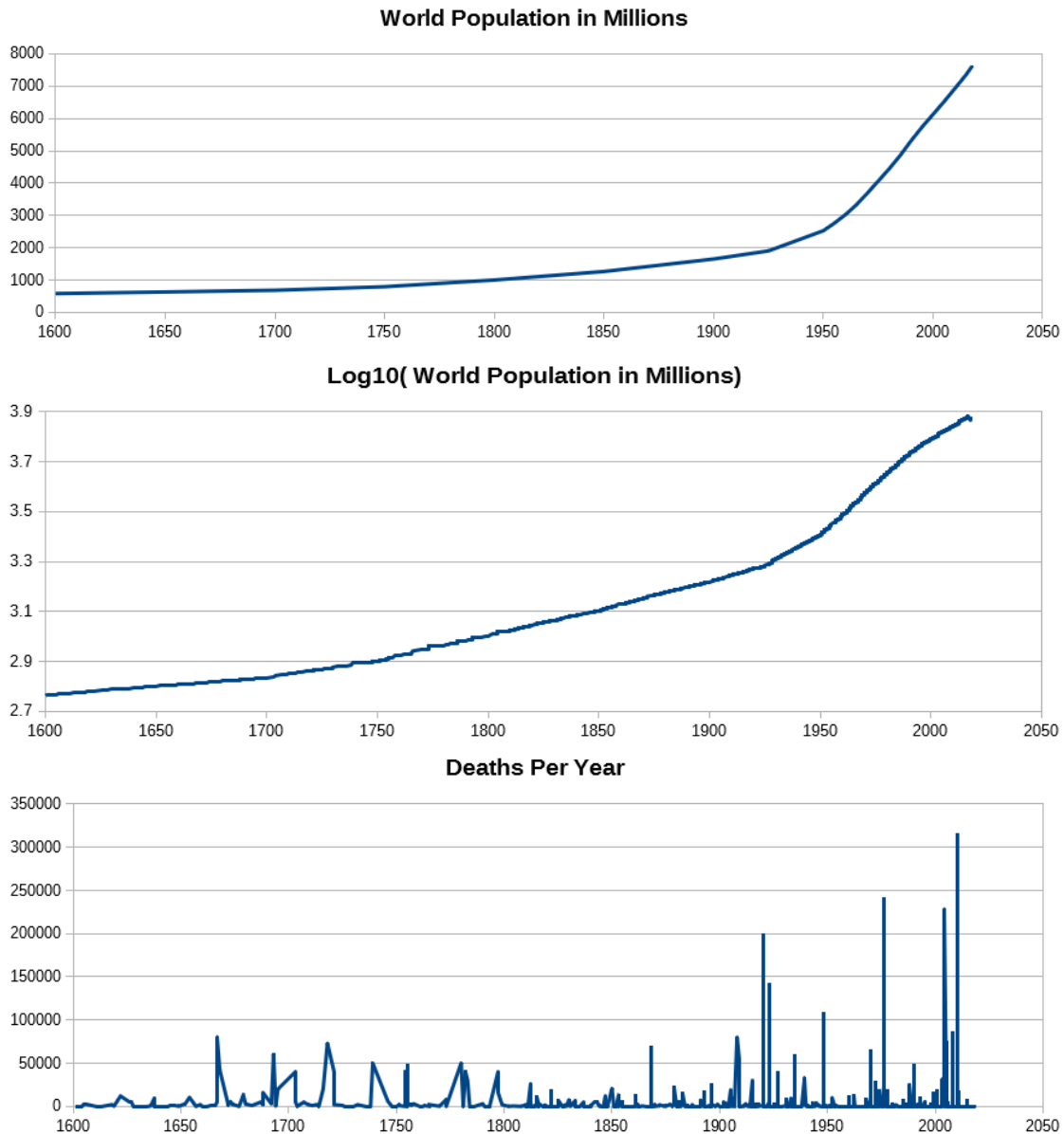
This last graph shows how the statistics changed when instrumental recording began around 1900: the *reported* number of quakes went up dramatically.

What about the number of deaths? One must be careful when drawing conclusions about this, because world population has been increasing exponentially since the beginning of the industrial revolution around 1800. One might simple-mindedly make an observation like, “Wow! Deaths due to old age have been increasing since 1914, so we must be in the last days!” Well *of course*, deaths due to old age are increasing simply because more people are being born, so the observation is meaningless. With a smoothly increasing population, it would be arbitrary to pick out one date as unique.

One might make a similar mistake by observing that the number of deaths due to earthquakes has been increasing, but failing to note that, because population has been increasing, the rate of deaths per unit of population has remained steady. In other words, in an increasing population, the *risk* of dying in a quake might be the same as it was for the past 400 years.

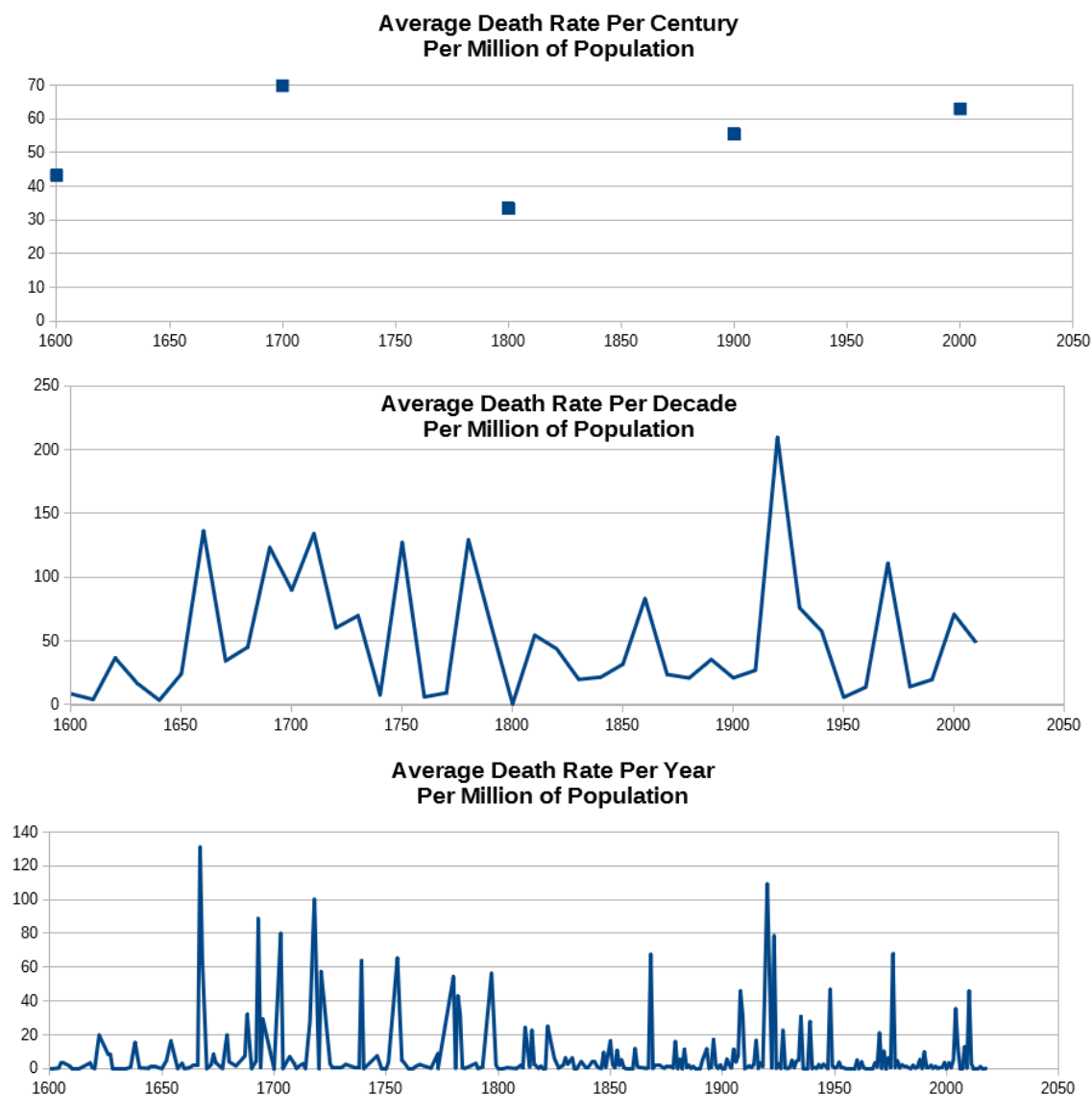
A related idea can be illustrated by considering murder rates. Suppose there are two towns, Nayok and Wahwik, with populations of 10 million and 10 thousand. Nayok has 1,000 murders per year; Wahwik has 100. So Nayok has a murder rate of 10 per hundred thousand per year; Wahwik a rate of 1,000 per hundred thousand per year. Which town has the worse murder problem: Nayok with 1,000 murders a year, or Wahwik with 100? Nayok with a rate of 10 per hundred thousand, or Wahwik with 1,000 per hundred thousand? In which town do you have the higher risk of being murdered? In which one would you rather live?

In its claims about earthquake death rates, the Watch Tower Society has made the above simple-minded mistakes by failing to account for population numbers. Furthermore, in singling out 1914 as a special date, it has failed to justify with actual data why it ought to be singled out. In the graphs of population growth shown below, the curves are seen to increase relatively smoothly, so that there is no special year that can be singled out as a major breakpoint. By eyeballing the curves, one might argue that there are minor breakpoints around 1700 and 1940, but not 1914.



What about the total number of deaths? These numbers are plotted above in the graph “Deaths Per Year”. Again a simple-minded observation would be that around 1900 these increased dramatically. But this fails to account for several obvious problems, the largest of which is population growth. Is a steady death rate properly characterized as “worse” in a growing population? Of course not. Only by plotting the death *rate* can a proper evaluation be made.

Applying the above “World Population” figures to the “Deaths Per Year” graph, we get the following graphs. What do we see? No significant trends in death rates from 1600 through 2018. One might observe that the 2000s had a lower death rate than the 1700s, but this is probably statistically insignificant.



The above world population figures are from these websites:

https://en.wikipedia.org/wiki/World_population

<http://www.worldometers.info/world-population/world-population-by-year/>

The websites give the following figures in terms of millions of population:

1600	580
1700	682
1750	791
1800	1,000
1850	1,262
1900	1,650
1950	2,525
1955	2,758
1960	3,018
1965	3,322
1970	3,682
1975	4,061
1980	4,440
1985	4,853
1990	5,310
1995	5,735
2000	6,127
2005	6,520
2010	6,930
2015	7,349
2018	7,633

The above earthquake figures are from this website:

National Geophysical Data Center / World Data Service (NGDC/WDS): Significant Earthquake Database.
National Geophysical Data Center, NOAA. [doi:10.7289/V5TD9V7K](https://doi.org/10.7289/V5TD9V7K)

“Significant Earthquake Database” <https://www.ngdc.noaa.gov/mndc/struts/form?t=101650&s=1&d=1>

By the late 1980s the Watch Tower Society was beginning vaguely to admit that perhaps the earthquake problem was nowhere nearly as great as it had been claiming. Likely this was helped along by the 1987 book *The Sign of the Last Days: When?*,⁶¹⁰ which presented extensive data proving that the Society’s claims about the “composite sign” beginning in 1914 were so much smoke and mirrors.

The Society’s tendency to drift toward vagueness and to shift the focus of discussion when hard data has proven its position untenable reached a new height in the articles “Natural Disasters—A Sign of the Times?” and “Natural Disasters—Is God Responsible?” in the December 1, 1993 *Watchtower* (p. 6). It finally admitted that earthquake frequency and intensity have always been the same: **“The earth and its dynamic forces have more or less remained the same throughout the ages.”** This admission has been known to JW critics since 1993.⁶¹¹

Since 1993 the Society has not, so far as I know, directly claimed that earthquakes have been “much worse” in frequency since 1914 than before. Rather, it has generally hinted, in a vague and non-committal manner, that quakes have been much worse in some unspecified way. When challenged, JW apologists resort to something like, “Jesus said we’d see earthquakes, and we see earthquakes!” But

⁶¹⁰ Carl Olof Jonsson and Wolfgang Herbst, *The Sign of the Last Days: When?*

⁶¹¹ See the article “The Watchtower Society Backpedals on Earthquakes” <https://critiquesonthewatchtower.org/old-articles/2006/02/watchtower-society-backpedals-on.html>

the Society and its apologists fail to note that a phenomenon that continues occurring pretty much as it always has is not a sign of anything at all. It is like observing that if we see that the grass is green, the sky is blue and young men lust after young women, we have seen signs of some portentous event. Such claims are self-evidently false, as long as one has the real facts at hand.

For an excellent debunking of the Watch Tower Society's claims about earthquakes, see <https://www.jwfacts.com/watchtower/earthquakes.php> .

Now let's take a brief look at the other major "signs of the times" that the Watch Tower Society has traditionally claimed are the components of "the composite sign" that it invented to buttress its claims about earthquakes, war, famine and pestilence.

War

Based on its interpretation of Matthew 24:6-7, Mark 13:7-8 and Luke 21:9-10 the Society claims that war since 1914 has been much worse than before 1914.⁶¹² As proof it lists Jesus' statements about "war and rumors of war" and that "nation will rise against nation and kingdom against kingdom" as features of the "composite sign" evident since 1914.

As shown above, this is a misapplication of Jesus' words, because he was warning *against* precisely this interpretation of events. The Society has often said that Matthew 24:7 points especially to world war. That the scripture does not do so can be seen by considering verse 6 together with verse 7: "You are going to hear of wars and reports of wars... For nation will rise against nation and kingdom against kingdom." Since, as the May 1, 1975 *Watchtower* said on page 274, "Jesus' expression 'nation against nation and kingdom against kingdom' also had a first-century application, so it is not limited to world wars," the verses apply equally well to *all* wars. Therefore the Society cannot say that Jesus predicted *world* wars, although he may have had it in mind. As stated earlier, understanding Jesus' words in verse 4, "Look out that nobody misleads you", as a warning not to interpret the common misfortunes of humanity as a sign of his coming, avoids these difficulties.

As to the war of 1914-1918 being the first "world war", note what several historians say. The War of the Spanish Succession (1702-1713) was "the first that can be called a 'world war,' because it involved the overseas world together with the leading powers of Europe."⁶¹³ The Seven Years' War (1756-1763) "was to a greater degree than the War of the Austrian Succession [1740-1748] a world war" which "came to embrace all the four continents of the world and all the great oceans."⁶¹⁴ The American War of Independence (1775-1783) turned into a general global conflict:⁶¹⁵

... what had started as an American revolution against England had exploded into a worldwide war. French and Spanish fleets fought the British in the English Channel, the West Indies and Gibraltar. The Spanish captured West Florida. Russia, Denmark, Sweden and Prussia joined to break England's blockade on France and Spain. Holland, too, ran naval stores to France, and supplied America so abundantly from the West Indies that England declared war on her. Their two navies fought to a standstill in the North Sea. England's line of ships and men was now stretched thin to circle the globe.

The Napoleonic Wars (1792-1815) began right after the French Revolution and comprised the fourth world war that began in the 18th century. One world history book said:⁶¹⁶

⁶¹² cf. *Awake!*, March 22, 1993, p. 6.

⁶¹³ R. R. Palmer, et al., *A History of the Modern World to 1815*, p. 183.

⁶¹⁴ *Världshistoria* (in Swedish), edited by Sven Tunberg and S. E. Bring, Norstedt & Söner, Vol. 10, Stockholm, 1930, p. 182.

⁶¹⁵ Irving Stone, *Those Who Love*, pp. 311-312.

⁶¹⁶ R. R. Palmer, et al., *A History of the Modern World to 1815*, p. 395.

It is convenient to think of the fighting from 1792 to 1814 as a ‘world war,’ as indeed it was, affecting not only all of Europe but places as far away as Latin America, where the wars of independence began, or the interior of North America, where the United States purchased Louisiana in 1803 and attempted a conquest of Canada in the War of 1812.

With regard to the wars that followed the Napoleonic wars another historian said:⁶¹⁷

None of these, however, was a world war of the type of those of the first fifteen years of the nineteenth century, [the Napoleonic wars during 1801-1815] which had involved not only all Europe but in a lesser degree every continent of the globe.

From the above quotations it is evident there is leeway in saying just what a “world war” is. The wars described involved mostly Europe whereas other areas were ancillary. World War I was similar:⁶¹⁸

However, all in all, it can be said that the war in theatres outside Europe was of minor strategical importance. The 1914/18 war was essentially a European war. It came later to be called a ‘world war’ because contingents from many parts of the British empire served in Europe, and because the United States joined the Entente Powers in 1917. But in reality, since the role of sea power was mostly passive, this was less of a ‘world war’ than some previous conflicts such as the Seven Years’ War... Whereas the 1914/18 war could hardly be called a world conflict, there can be no such thoughts about the war brought on by Hitler in 1939.

With regard to the actual number of countries involved in World War I, the most that can be said to have been involved in some way is 33, not the 28 *Awake!* stated. But many of these played only a minor role, so the number of active participants is more like fifteen.

What about the death toll from World War I? Did it exceed that from any previous wars? The answer depends on what is included. Are only soldiers counted, or civilians as well? What about auxiliary things like disease related to war? The March 22, 1993 *Awake!*’s figure of 14 million appears to include 9 million direct battle related deaths plus 5 million civilian casualties, and is reasonable. As to whether this exceeded the death toll of previous wars, note the following historical information:

The conquest of Northern China in 1211-1218 by Genghis Khan is estimated to have cost 18 million Chinese lives. The Thirty Years’ War (1618-1648) was an international conflict involving about 10 nations and is estimated to have killed about 2-3 million soldiers. However, in Germany alone, some 7-8 million civilians were killed, and figures are not available for civilians killed elsewhere. In 1644 the Manchus invaded China and in the ensuing conflict an estimated 25 million were killed. In the Napoleonic Wars some 5-6 million died. The Taiping Rebellion in China (1850-1864) was a civil war in which anywhere from 20 to 100 million died.⁶¹⁹

What is the point? This: The war which has come to be called World War I was neither greater nor more destructive than many previous wars. That honor goes to World War II, so any claims about great wars ought to consider 1939 or 1945 as being special, not 1914. Of course, the Society will have none of that.

The most that can be said is that World War I was the most destructive “world war” up to that time in terms of *raw numbers* of deaths. However, on a *percentage* basis, some previous world wars were equal or greater. Assuming 14 million killed in World War I and a world population of 1.8 billion, we get a death rate of about 780 per hundred thousand of total population. With a world population of about 900 million around 1810, the death rate of the Napoleonic Wars works out to about 600 per hundred thousand. Assuming an equal number killed outside Germany in the Thirty Years’ War, and a

⁶¹⁷ Cyril Falls, *A Hundred Years of War*, p. 161.

⁶¹⁸ Viscount Montgomery, *A History of Warfare*, pp. 470, 497.

⁶¹⁹ https://en.wikipedia.org/wiki/Taiping_Rebellion

world population of 600 million in the 17th century (see page 277), the death rate is about 4000 per hundred thousand. Which of these should be considered the “greatest” war?

So, World War II was the most destructive war of all time by any measure, and World War I was about equal to the most destructive wars up to then. Other data show that overall, wars in the 20th century are comparable to those in the 17th through 19th centuries, and so there has been no particular change, certainly not since 1914. Two statements by historians of war indicate this:

We must be careful to remember that this hypothesis has not really been confirmed, and that there may actually be no trend at all. Unlikely as it sounds, there may have been no significant change over time in the incidence of peace and war and in the casualties of violence. Peace and war may occur about as frequently and last as long as they ever did; casualties may also be very comparable to what they have always been.⁶²⁰

Is war on the increase, as many scholars as well as laymen of our generation have been inclined to believe? The answer would seem to be a very unambiguous negative. Whether we look at the number of wars, their severity or magnitude, there is no significant trend upward or down over the past 150 years. Even if we examine their intensities, we find that later wars are by and large no different from those of earlier periods.⁶²¹

Whatever claims or counterclaims may be made, one thing is clear: Jesus’ statement about wars has been fulfilled—but not just in the 20th century or just since 1914. It has come true *in every generation* since his day and up through the present. He made a simple statement that there would be wars and rumors of wars, with nation rising against nation and kingdom against kingdom. This has happened repeatedly throughout human history. Adding anything to Jesus’ words is pure speculation. The Watch Tower Society’s attempts to limit Jesus’ words to only the 20th century are a failure, because its claims are contradicted by the overwhelming evidence of history.

Famine

Based on the same misinterpretation of the Gospel accounts as for its claims about war, the Society claims that famine has been much more severe in the 20th century than ever before. For example:⁶²²

The greatest famine in all history struck after World War I. Another terrible one followed World War II, and now malnutrition affects one fifth of the world’s population. Annually, some 14 million children die from malnutrition.

Contrast this with what a *Watchtower* article said:⁶²³

The greatest recorded famine of all time... struck China between 1878 and 1879... Estimates of the number of Chinese who died in that famine vary from 9 to 13 million.

It seems the left hand does not know what the right is doing in the Society’s Writing department. This begs the question: Does either hand know what it is doing at all? But even the 1983 *Watchtower* is incorrect. The Chinese famine of 1849 took nearly 14 million lives, and the famine that struck India in 1769-1770 may have killed tens of millions.

It should be noted that there is a great difference between the gross food shortages, or famine, implied by the Bible writer, and malnutrition. There are very many people earthwide who are malnourished in the sense they don’t receive enough of the right type of food, but there are far fewer that are actually starving and fit the term used by Matthew. In times past nearly everyone was

⁶²⁰ Francis A. Beer, *Peace Against War*, pp. 46-47.

⁶²¹ J. David Singer and Melvin Small, *The Wages of War 1816-1965*, p. 201.

⁶²² *Awake!*, March 22, 1993, p. 7.

⁶²³ *The Watchtower*, April 15, 1983, p. 3.

malnourished in some way. Vitamin deficiencies such as caused ricketts and scurvy were nearly universal, and this situation has been rectified only in the more developed nations. This is clearly not what the Bible writer referred to. Rather, he was talking about acute catastrophes of famine. This sort of famine has occurred all throughout human history, so the point is whether acute famine was much worse in the 20th century than in previous ones.

It is not difficult to show that famines have decreased greatly in the 20th century compared to prior ones. Four famines struck China in 1810, 1811, 1846 and 1849, and killed at least 45 million. Cannibalism was reported to be rampant. All told, some 100 million people starved to death in China alone in the 19th century. What about the 20th century? In 1958-1961 a severe famine struck China, in which perhaps 30 million died. Perhaps another 5 million in China have died later in the 20th century. So China, whose population in the 20th century was more than double what it was in the 19th, has experienced significantly less famine in both absolute and relative terms in the 20th century. In almost every country of Europe and the Americas, famine became almost unknown by the mid-20th century. In parts of the rest of the world it is the same as it has always been. The most severe famines in nearly every part of the world occurred before 1914. While malnutrition is certainly a problem and famines still occur, the situation was well described in 1975 by one food expert:⁶²⁴

We might be inclined to deduce from the pictorial evidence of famine that we have seen recently on television, in newspapers, and in magazines that the world is more prone to famine now than it used to be. But the evidence is clearly to the contrary... There has been a rather substantial reduction in the incidence of famine during the past century.

For this reason, when famine does strike it is big news.

Pestilence

The Society claims that pestilence has been much more severe in the 20th century than ever before. For example:

As World War I ended, some 21 million people were felled by the Spanish flu. Since then, heart disease, cancer, AIDS, and other pestilences have killed hundreds of millions.⁶²⁵

Contrast this with what an *Awake!* article said:

And no bells tolled and nobody wept no matter what his loss because almost everyone expected death... And people said and believed, 'This is the end of the world.'—An Italian chronicler writing on the effects of the Black Death in the 14th century.⁶²⁶

Note that *Awake!* includes heart disease and cancer among the pestilences of our time. But this is grasping at straws because heart disease and cancer are not “pestilences”. The use of any word depends on its generally accepted meaning. In English, “pestilence” implies a rapidly spreading epidemic disease such as smallpox or bubonic plague. The Greek word *loimos*, translated in Luke 21:11 as “pestilence”, means a “deadly *infectious* malady” according to *Vine's Expository Dictionary of Biblical Words*. The Society's Bible dictionary *Insight on the Scriptures*, Vol. 1, page 617, gives the definition of “pestilence” as: “Any rapidly spreading *infectious* disease capable of attaining epidemic proportions and of causing death.” The Bible uses other words when speaking of diseases in general as opposed to pestilences.

⁶²⁴ D. Gale Johnson, *World Food Problems and Prospects*, p. 17.

⁶²⁵ *Awake!*, March 22, 1993, p. 7. Some historians today estimate that upward of 50 million died.

⁶²⁶ Quoted in *Awake!*, April 8, 1988 p. 3.

Obviously, cancer and heart disease are not pestilences, even according to the Society's own Bible dictionary, so *Awake!* and other Watch Tower literature are dishonest in claiming they are. The argument is grasping at straws because the writer is reduced to claiming diseases that used to be those of old age are "pestilences". The main reason cancer and heart disease are prevalent today is that the advances of medicine since the end of the 19th century have reduced actual "pestilences" so greatly that many more people live to be old enough to die from age-related diseases rather than infectious diseases. This is shown by the drastic decrease in child mortality in the more developed countries in the 20th century.

It can even be argued that by calling cancer and heart disease "pestilences" the writer of *Awake!* shows he knows very well that true pestilences have decreased since 1914. This is true because if all diseases can also be termed pestilences, then any change in what diseases people generally die from will have almost no effect on the death rate due to disease. This is simply because if people do not die of a pestilence in youth they will die of another disease in old age. Cancer and heart disease tend to be diseases of old age. Therefore, interpreting Jesus' statement about pestilence as referring to disease in general results in nothing measurable and is of no value as a sign.

The fact is that, because of medical advances, epidemic disease played a minor role in the 20th century compared to what it did in earlier times. While AIDS became notorious in the 1980s, even it doesn't very well fit the definition of pestilence since it mostly attacked people who engaged in *avoidable* forms of behavior such as sexual promiscuity and some forms of drug use. Pestilence in the biblical sense strikes everyone equally and without warning, and AIDS has certainly not been evident for most of the 20th century. Some other true "pestilences" have lately been increasing, but most epidemic diseases are simply not something the average person lives in fear of.

This contrasts greatly with times past. In 541-542 the "plague of Justinian" killed some 25-50 million people in Europe—as much as half the population—and up to 100 million worldwide during the 50 years of its run.⁶²⁷ In the 14th century the Black Death killed an estimated 75 to 200 million worldwide in six years—about 15% to 40% of the population of the known world. As many as 50 million died in Europe alone—some 60% of the population.⁶²⁸ Some cities and villages were virtually depopulated. Because so many were killed, many historians have called the Black Death the most lethal disaster in recorded history short of the Flood. One historian noted:⁶²⁹

The impact of the Black Death, the greatest ecological upheaval, has been compared to that of the two world wars of the twentieth century. To a degree this is true. But the Black Death... wrought even more essential change... The effects of this natural and human disaster changed Europe profoundly, perhaps more so than any other series of events. For this reason, alone, the Black Death should be ranked as the greatest biological-environmental event in history, and one of the major turning points of Western Civilization.

Nothing remotely like these plagues occurred in the 20th century. While the Spanish flu probably killed some 50 million people in 1918, that was only about 2.8% of the world's population. Contrast that with the 60% of Europe's population that perished in the Black Death. If the Society's claims about pestilence were correct, surely we would now see the worst pestilences of all time and live in constant fear of them.

The world situation changed somewhat at the beginning of 2020, when the Covid-19 pandemic began. As of the beginning of summer, 2021, roughly 180 million cases had been reported and about

⁶²⁷ <https://listverse.com/2016/10/17/10-scary-facts-about-the-justinian-plague/> <https://jmvh.org/article/the-history-of-plague-part-1-the-three-great-pandemics/>

⁶²⁸ <https://www.historytoday.com/ole-j-benedictow/black-death-greatest-catastrophe-ever>

⁶²⁹ Robert S. Gottfried, *The Black Death*, p. 163.

3.8 million deaths.⁶³⁰ World population was about 7.9 billion.⁶³¹ That gives a death rate of about 0.5%—far lower than past pandemics like the Spanish Influenza.

⁶³⁰ https://www.worldometers.info/coronavirus/?utm_campaign=homeAdvegas1?%22

⁶³¹ <https://www.worldometers.info/world-population/>

Misrepresentation of the Watch Tower's Own Teachings and History

This paper would run to several thousand pages if I included all of the misrepresentations the Society has published about its own teachings and history. The basic problem, as mentioned above, has two parts: (1) the Watch Tower Society has taught all manner of falsehoods and made many false predictions; (2) the leaders of Jehovah's Witnesses claim to speak in God's name, and since God cannot be wrong, these leaders have to rationalize why they can make egregious errors yet continue to claim to speak for God. Some examples follow.

A History of Failed Predictions

The Watch Tower Society is notorious for misrepresenting its own history. Its founder Charles Taze Russell made an enormous number of mistakes in his teachings, almost all of which have been abandoned by his successors.⁶³² He predicted earthshaking events for the year 1914, not one of which came to pass.⁶³³

The same is true of Joseph Franklin Rutherford, who succeeded Russell as the President of the Watch Tower Bible & Tract Society.⁶³⁴ He predicted that the battle of Armageddon would come in 1925, as part of his 1920 advertising campaign "Millions Now Living Will Never Die", which originated in his speeches titled "The World Has Ended—Millions Now Living May Never Die" beginning in February 1918. After his 1925 prediction failed, he was forced to admit to the Bethel Family, "I know I made an ass of myself".⁶³⁵ Within the next five years, about ¾ of the Bible Students left the Watch Tower organization, but Rutherford kept up with his false teachings and false predictions. He began claiming that he received spiritual knowledge from God and Jesus via angelic messengers. So Rutherford actually claimed direct inspiration for himself, Watch Tower staff, and *The Watchtower* magazine. Note a few of his claims:⁶³⁶

The remnant are instructed by the angels of the Lord. The remnant do not hear audible sounds, because such is not necessary. Jehovah has provided his own good way to convey thoughts to the minds of his anointed ones. (*Preparation*, 1933, p. 64; *The Watchtower*, October 15, 1933, pp. 247-8; *The Watchtower*, September 15, 1938, p. 286)

Jehovah would employ his power through his angels to put in the minds of his servants to take the course that he would have them take. (*The Watchtower*, November 1, 1937, p. 326, ¶ 14; *1938 Yearbook of Jehovah's Witnesses*, Daily Texts and Comments, February 15)

Certain duties and kingdom interests have been committed by the Lord to his angels, which include the transmission of information to God's anointed people on the earth for their aid and comfort. Even though we cannot understand how the angels transmit this information, we know that they do it. (*Preparation*, 1933, pp. 36, 37; *The Watchtower*, August 15, 1933, p. 243 ¶ 3; *The Watchtower*, March 1, 1938 p. 79, ¶ 4)

⁶³² cf. M. James Penton, *Apocalypse Delayed: The Story of Jehovah's Witnesses*, 3rd ed., 1985; Edmond C. Gruss, *Jehovah's Witnesses: Their Claims, Doctrinal Changes, and Prophetic Speculation. What Does the Record Show?*, 2001; Edmond C. Gruss, *The Four Presidents of the Watch Tower Society: The Men and the Organization They Created*, 2003.

⁶³³ cf. <https://critiquesonthewatchtower.org/old-articles/2006/02/part-1-jws-beliefs-about-chronology-in.html>
<https://critiquesonthewatchtower.org/old-articles/2006/02/part-2-statements-concerning-1799-1874.html>

⁶³⁴ <https://critiquesonthewatchtower.org/old-articles/2006/02/part-3-statements-concerning-1918-1925.html>

⁶³⁵ *The Watchtower*, October 1, 1984, p. 24.

⁶³⁶ More references: <https://www.youtube.com/watch?v=HSSStLwkhI4>; "Was Rutherford a Spirit Medium"; <http://underpop.online.fr/w/watchtower-bible-and-tract-society/was-rutherford-a-spirit-medium.pdf> "The Spirit World Guided By Rutherford", Ken Raines.

Angels are delegated by the Lord to convey his instructions to the members of his organization on earth. Just how this is done is not necessary for us to understand. (*The Watchtower*, December 1, 1933, p. 364)

Without a doubt the Lord uses his angels to cause the truth to be published in *The Watchtower*... Certainly God guides his covenant people by using the holy angels to convey his message to them. (*The Watchtower*, February 1, 1935, p. 41)

No man can properly interpret prophecy, and the Lord sends his angels to transmit correct information to his people,... The Greater Gideon [Jesus] does not begin the Armageddon battle until the message of truth from Jehovah God concerning the same is transmitted by his angels to the faithful remnant on the earth. (*The Watchtower*, February 15, 1935, p. 52, ¶ 7, 8; *1935 Yearbook of Jehovah's Witnesses*, Daily Texts and Comments, November 13. See further, *The Watchtower*, July 1, 1938, pp. 199, 200, ¶ 24, 25; *1939 Yearbook of Jehovah's Witnesses*, Daily Texts and Comments, June 22; J.F. Rutherford, *His Vengeance*, 1934, p. 6)

These are direct claims of inspiration. Today Jehovah's Witnesses—both the organization and JW's as individuals—usually claim that the Watch Tower Society never made such claims, and in particular do not claim to be inspired today. But they *do* make that claim today: they use the weasel term “divinely directed”.⁶³⁷

By the 1940s Rutherford was again proclaiming the nearness of Armageddon. Though not stating a particular year, he was adamant that the end was about to occur, prompting the release of articles including topics on why marriage and child bearing should be put off until after Armageddon. In 1941 the book *Children* was released discussing such things. *The Watchtower* summed up the atmosphere after release of the book.⁶³⁸

Receiving the gift, the marching children clasped it to them, not a toy or plaything for idle pleasure, but the Lord's provided instrument for most effective work in the remaining months before Armageddon.

After Rutherford died and Nathan Knorr took over as President, and Fred Franz became Vice-President and head theologian of the Watch Tower Society, all manner of new and wild teachings were advanced. Predictions of Armageddon remained mostly low key until 1966, when the book *Life Everlasting in Freedom of the Sons of God* was released, and said (pp. 26-30):

Six thousand years from man's creation will end in 1975, and the seventh period of a thousand years of human history will begin in the fall of 1975 C.E... How appropriate it would be for Jehovah God to make of this coming seventh period of a thousand years a sabbath period of rest and release, a great Jubilee sabbath for the proclaiming of liberty throughout the earth to all its inhabitants! This would be most timely for mankind. It would also be most fitting on God's part, for, remember, mankind has yet ahead of it what the last book of the Holy Bible speaks of as the reign of Jesus Christ over earth for a thousand years, the millennial reign of Christ... It would not be by mere chance or accident but would be according to the loving purpose of Jehovah God for the reign of Jesus Christ, the “Lord of the sabbath,” to run parallel with the seventh millennium of man's existence.

Although this did not say flat-out that Armageddon would come by 1975, it strongly intimated it.⁶³⁹ In the next several years, as large numbers of Jehovah's Witnesses became enthusiastic about this expectation, the Society followed Fred Franz's lead and played it up for all it was worth. *The Watchtower* and *Awake!* magazines carried articles playing up the theme. The March 1968 *Kingdom Ministry* encouraged more pioneer service due to the nearness of the end, saying (pp. 3-6) :

Just think, brothers, there are only about ninety months left before 6,000 years of man's existence on earth is completed.

⁶³⁷ cf. <http://www.bible.ca/Jw-inspiration.htm> <http://www.eaec.org/cults/jw/jw5.htm>

⁶³⁸ *The Watchtower*, September 15, 1941, p. 288.

⁶³⁹ <https://critiquesonthewatchtower.org/old-articles/2006/02/part-3-statements-concerning-1918-1925.html>
<https://critiquesonthewatchtower.org/old-articles/2006/02/1975-new-info.html>

Watch Tower officials enthusiastically played up the theme. I remember being electrified at a Service Meeting around May 1968 when Circuit Servant Anthony Conte said something like, “Brothers, do you realize that there are only 88 months left until the end of 6,000 years of human history? *And do you understand what that means?!*” A few months later the book *The Truth That Leads To Eternal Life* was published. As part of its release, a new six-month Bible study program was launched, where if the Student failed to begin converting to the JW’s by six months into the Study, he was dropped.

The September 1968 *Kingdom Ministry* (p. 8) strongly encouraged JW’s to believe that 1975 was going to be “it” by commenting on this “assembly line conversion process”:

Now time is running short for this old system of things and we want to help as many sheeplike ones as we can to learn the truth and act on it while there is still time... Have in mind helping them learn enough of the truth so that they can act on it within six months... At all times keep before interested ones the importance of beginning to associate with Jehovah’s people at the meetings. If, at the end of six months of intensive study and conscientious efforts to get them to meetings, they are not yet associating with the congregation, then it may be best to use your time to study with someone else who really wants to learn the truth and make progress. Make it your goal to present the good news on Bible studies in such a way that interested ones will act within six months!

Enthusiasm for 1975 reached a peak in JW congregations around 1973. The Society had said so much about what might occur before 1975—usually with an editorial wink—and nothing of significance had yet happened by 1973, that many JW’s simply lost enthusiasm for it. Some no longer put stock in it, although they tended to be viewed critically by other JW’s.

After 1975 came and went, and nothing happened, many JW’s quit, never to return. Eventually the Society published a grudging ‘apology’ that was not really an apology, because it blamed JW’s as individuals for inventing the 1975 teachings. Of course, the Society lied through its teeth about this. Today, most younger JW’s know nothing of the 1975 prediction, and when confronted with information about it by JW critics, usually claim that the Society had no part in the prediction.

Did Watch Tower leaders learn anything from their false and failed predictions?⁶⁴⁰ Apparently not. Various publications continued dogmatically to proclaim that “the end” is coming Real Soon Now, some even saying “by the end of the 20th century”. The January 1, 1989 *Watchtower* magazine stated (p. 12):

The apostle Paul was spearheading the Christian missionary activity. He was also laying a foundation for a work that would be concluded in our 20th century.

The phrase “concluded in our 20th century” was changed in the *Watchtower* bound volume to “completed in our day”. Despite this change, the original statement proves that the Watch Tower’s Writing Staff, Governing Body helpers, and the Governing Body itself continue to buy into the Real Soon Now notion. They do not learn from their mistakes.

As late as 1997, the Society stated:⁶⁴¹

In the early 1920’s, a featured public talk presented by Jehovah’s Witnesses was entitled “Millions Now Living Will Never Die.” This may have reflected overoptimism at that time. But today that statement can be made with

⁶⁴⁰ Many lists of failed predictions can be found online. cf. <http://www.watchtowers.net/dates.html> <http://www.watchtowers.net/dates2.html> <http://www.watchtowers.net/dates3.html> <http://www.watchtowers.net/dates4.html>

⁶⁴¹ *The Watchtower*, January 1, 1997, p. 11.

full confidence. Both the increasing light on Bible prophecy and the anarchy of this dying world cry out that the end of Satan's system is very, very near!

Here it is 25 years later, and it is quite clear that the Watch Tower Society, as Rutherford admitted with respect to his 1925 prediction, has "made an ass" of itself.

Down through the years, as briefly described above, the Society has always either downplayed, misrepresented or completely ignored its old false teachings and false predictions. Occasionally the Society tells an outright lie, but far more often the dishonesty comes in the form of a partial truth told in such a way that readers are quietly misled. This is hardly the behavior of an organization whose leaders truly speak for the God of Truth.

What C. T. Russell Actually Taught

Many of the Society's most blatant misrepresentations of its history have to do with the false teachings and predictions of C. T. Russell. As mentioned above, Russell made many claims and predictions about 1914 and about other things that turned out to be wrong, and which the Watch Tower Society that he founded has abandoned.

One of the few of Russell's teachings that has survived is the 1914 date. This has been retained by his successors because their basic claim of speaking for God rests on their claim that in 1914, God appointed Jesus Christ as king of his invisible Kingdom, and in 1919 Christ in turn appointed the leaders of the Watch Tower Society as a special "faithful and discreet slave class" that had authority over "all Christ's belongings" on earth. That doctrine was changed in 2013 such that now, only the present JW Governing Body comprises this "faithful slave". Because this doctrine of being specially appointed by God to speak for him is so outlandish, JW leaders have had to misrepresent most of the early teachings of the Watch Tower Society about 1914 and so forth, because they want to maintain the fiction that Russell was divinely directed. Here is a recent example from *The Watchtower* describing C. T. Russell's predictions:⁶⁴²

12 When the time approached for God's Kingdom in the hands of Jesus to start ruling from heaven, Jehovah helped his people to understand the timing of events. In 1876, an article written by Charles Taze Russell was published in the magazine *Bible Examiner*. That article, "Gentile Times: When Do They End?," pointed to 1914 as a significant year. The article linked the "seven times" of Daniel's prophecy with "the appointed times of the nations" spoken of by Jesus.—Dan. 4:16; Luke 21:24.

13 In 1914, war broke out between nations of Europe—a war that spread and engulfed the whole world. By the time it ended in 1918, terrible food shortages had been experienced and there was a flu epidemic in which more people died than were killed in the war. Thus "the sign" that Jesus had given to identify his invisible presence as earth's new King started to be fulfilled. (Matt. 24:3-8; Luke 21:10, 11) Ample evidence points to the year 1914 as the time when "a crown was given" to the Lord Jesus Christ. He "went out conquering and to complete his conquest." (Rev. 6:2) He cleansed the heavens in a war against Satan and his demons, who were hurled down to the vicinity of the earth. Ever since, mankind has experienced the truthfulness of these inspired words: "Woe for the earth and for the sea, because the Devil has come down to you, having great anger, knowing that he has a short period of time."—Rev. 12:7-12.

A comprehensive critique of paragraph 12 has been done by Doug Mason.⁶⁴³ I'll point out just a couple of the Society's misrepresentations here. The *Watchtower* article says:

In 1876, an article written by Charles Taze Russell was published in the magazine *Bible Examiner*. That article, "Gentile Times: When Do They End?," pointed to 1914 as a significant year... In 1914, war broke out between

⁶⁴² *The Watchtower*, June 15, 2015, pp. 22-23

⁶⁴³ <https://ad1914.files.wordpress.com/2013/12/how-many-mistakes-in-one-paragraph.pdf> Mason also reproduces the 1876 *Bible Examiner* article.

nations of Europe—a war that spread and engulfed the whole world... Thus “the sign” that Jesus had given to identify his invisible presence as earth’s new King started to be fulfilled.

The weasel phrase “pointed to 1914 as a significant year” has been used countless times in Watch Tower publications to mislead readers about just what was pointed to and what its significance was. The material leads the reader to believe that Russell’s 1876 article predicted World War I. While the material does not explicitly say this, the juxtaposition of two key phrases strongly implies it: “Russell pointed to 1914. In 1914 World War I broke out.” This deliberate juxtaposition of two important phrases is a standard method used by dishonest people to mislead their listeners. Furthermore, the significance that Russell attached to 1914 has almost nothing in common with what Jehovah’s Witnesses today attach to it. See below for a few details. Without explaining the difference in significance, the *Watchtower* writer dishonestly leads the reader to believe there are no differences.

The fact is that Russell did not predict world war in 1914. Rather, he predicted that God’s Kingdom would begin a process of deposing all the governments of the world and replacing them with “Kingdom rule” **sometime before 1914**. He predicted many other things for 1914 and the years leading up to it.⁶⁴⁴

For example, in the 1876 *Bible Examiner* Russell said that not later than 1914 (p. 27):

Gentile Governments shall have been dashed to pieces; when God shall have poured out of his fury upon the nations, and they acknowledge him King of Kings and Lord of Lords.

In Russell’s later teaching he clarified that “dashed to pieces” did not mean total destruction of all the people in the Gentile nations, but destruction of the governments *as organizations*, to be replaced by the government of God’s Kingdom.

Russell made his teachings about the years up through 1914 very clear in his 1889 book *The Time Is At Hand*, which said concerning the times of the Gentiles, (pp. 76-77, early 1912 edition):

God’s Kingdom, the Kingdom of Jehovah’s Anointed ... will be established gradually, during a great time of trouble with which the Gospel age will close, and in the midst of which present dominions shall be utterly consumed, passing away amid great confusion.

In this chapter we present the Bible evidence proving that the full end of the times of the Gentiles, i.e., the full end of their lease of dominion, will be reached in A.D. 1914; and that that date will be the farthest limit of the rule of imperfect men. And be it observed, that if this is shown to be a fact firmly established by the Scriptures, it will prove: —

Firstly, That at that date the Kingdom of God, for which our Lord taught us to pray, saying, “Thy Kingdom come,” will have obtained full, universal control, and that it will then be “set up,” or firmly established, in the earth, on the ruins of present institutions.

Secondly, It will prove that he whose right it is thus to take the dominion will then be present as earth’s new Ruler; and not only so, but it will also prove that he will be present for a considerable period before that date; because the overthrow of these Gentile governments is directly caused by his dashing them to pieces as a potter’s vessel (Psa. 2:9; Rev. 2:27), and establishing in their stead his own righteous government.

Thirdly, It will prove that some time before the end of A.D. 1914 the last member of the divinely recognized Church of Christ, the “royal priesthood,” “the body of Christ,” will be glorified with the Head; because every member is to reign with Christ, being a joint-heir with him of the Kingdom, and it cannot be fully “set up” without every member.

Fourthly, It will prove that from that time forward Jerusalem shall no longer be trodden down of the Gentiles, but shall arise from the dust of divine disfavor, to honor; because the “Times of the Gentiles” will be fulfilled or completed.

⁶⁴⁴ <https://critiquesonthewatchtower.org/old-articles/2006/02/part-1-jws-beliefs-about-chronology-in.html>
<https://critiquesonthewatchtower.org/old-articles/2006/02/part-2-statements-concerning-1799-1874.html>

Fifthly, It will prove that by that date, or sooner, Israel's blindness will begin to be turned away; because their "blindness in part" was to continue only "until the fulness of the Gentiles be come in" (Rom. 11:25), or, in other words, until the full number from among the Gentiles, who are to be members of the body or bride of Christ, would be fully selected.

Sixthly, It will prove that the great "time of trouble such as never was since there was a nation," will reach its culmination in a world-wide reign of anarchy; and then men will learn to be still, and to know that Jehovah is God and that he will be exalted in the earth.

Seventhly, It will prove that before that date God's Kingdom, organized in power, will be in the earth and then smite and crush the Gentile image (Dan. 2:34) — and fully consume the power of these kings. Its own power and dominion will be established as fast as by its varied influences and agencies it crushes and scatters the "powers that be" — civil and ecclesiastical — iron and clay.

Note that the above is from a pre-1912 edition. Late 1912 and subsequent editions edited some of the statements thus:

In this chapter we present the Bible evidence proving that the full end of the times of the Gentiles, i.e., the full end of their lease of dominion, will be reached in A.D. 1914; and that that date will see the disintegration of the rule of imperfect men.

Firstly, That at that date the Kingdom of God, for which our Lord taught us to pray, saying, "Thy Kingdom come," will begin to assume control, and that it will then shortly be "set up," or firmly established...

Thirdly, It will prove that some time before the end of the overthrow the last member of the divinely recognized Church of Christ...

On pages 98-99 *The Time Is At Hand* said:

True, it is expecting great things to claim, as we do, that within the coming twenty-six years all present governments will be overthrown and dissolved; but we are living in a special and peculiar time, the "Day of Jehovah," in which matters culminate quickly; and it is written, "A short work will the Lord make upon the earth..."

In view of this strong Bible evidence concerning the Times of the Gentiles, we consider it an established truth that the final end of the kingdoms of this world, and the full establishment of the Kingdom of God, will be accomplished by the end of A.D. 1914.

The post-1912 editions edited the second paragraph to read:

In view of this strong Bible evidence concerning the Times of the Gentiles, we consider it an established truth that the final end of the kingdoms of this world, and the full establishment of the Kingdom of God, will be accomplished near the end of A.D. 1915.

The Society tends to minimize the certainty with which Russell published statements like these, but his express statement that "we consider it an established truth" clearly shows his intent. On page 101 the 1908 edition of *The Time Is At Hand* said:

Be not surprised, then, when in subsequent chapters we present proofs that the setting up of the Kingdom of God is already begun, that it is pointed out in prophecy as due to begin the exercise of power in A.D. 1878, and that the "battle of the great day of God Almighty" (Rev. 16:14), which will end in A.D. 1914 [Later editions of *The Time Is At Hand* changed this to 1915] with the complete overthrow of earth's present rulership, is already commenced. The gathering of the armies is plainly visible from the standpoint of God's Word.

If our vision be unobstructed by prejudice, when we get the telescope of God's Word rightly adjusted we may see with clearness the character of many of the events due to take place in the "Day of the Lord" — that we are in the very midst of those events, and that "the Great Day of His Wrath is come."

Normal readers need no help in judging that not a single observable thing that Russell predicted came true. One might argue that his prediction of "the end of the Gentile times" referred to an invisible

event, but that has nothing to do with what the Watch Tower Society has long claimed were *visible* events in and around 1914.

After the lapse of a few years, J. F. Rutherford began the process of replacing Russell's unfulfilled predictions with a series of invisible and spiritual events associated with the years 1914 and 1918. By the early 1930s the process was complete.

An interesting comment on this transformation is made by Carl Sagan in *Broca's Brain*.⁶⁴⁵

Doctrines that make no predictions are less compelling than those which make correct predictions; they are in turn more successful than doctrines that make false predictions.

But not always. One prominent American religion confidently predicted that the world would end in 1914. Well, 1914 has come and gone, and—while the events of that year were certainly of some importance—the world does not, at least so far as I can see, seem to have ended. There are at least three responses that an organized religion can make in the face of such a failed and fundamental prophecy. They could have said, “Oh, did we say ‘1914’? So sorry, we meant ‘2014.’ A slight error in calculation. Hope you weren’t inconvenienced in any way.” But they did not. They could have said, “Well, the world would have ended, except we prayed very hard and interceded with God so He spared the Earth.” But they did not. Instead, they did something much more ingenious. They announced that the world had in fact ended in 1914, and if the rest of us hadn’t noticed, that was our lookout. It is astonishing in the face of such transparent evasions that this religion has any adherents at all. But religions are tough. Either they make no contentions which are subject to disproof or they quickly redesign doctrine after disproof. The fact that religions can be so shamelessly dishonest, so contemptuous of the intelligence of their adherents, and still flourish does not speak very well for the tough-mindedness of the believers. But it does indicate, if a demonstration were needed, that near the core of the religious experience is something remarkably resistant to rational inquiry.

Lies in the January 1, 2000 *Watchtower* Magazine

The first lie about 1914 in this issue is similar to those described above—teachings about 1914 are misrepresented by juxtaposing two unrelated sentences as if one logically follows the next, such that the reader is misled by a false implication. The second lie is that the Society taught about “Babylon the Great” in 1919, when its first teaching about this notion was in 1963. See <https://critiquesonthewatchtower.org/old-articles/2006/02/latest-wts-lies.html> for details.

Lying While Pretending to Tell the Truth

The Watch Tower Society would like people to believe that God, in some magical way, more or less inspired Charles Taze Russell to advocate his “1914 chronology” after he adopted it from Second Adventist Nelson Barbour in 1876. The Society has often lied about exactly what Russell taught, by pretending that Russell predicted World War I and predicted that Jesus would return invisibly in 1914.

The fact is that Russell did neither. He predicted, not a world war in 1914, but that all the nations of the world would be destroyed or come under Christ's complete subjection by the end of 1914. He also taught, beginning in 1876, that Christ had invisibly returned in 1874. The Society held onto this teaching until sometime between 1930 and 1943.

As mentioned above, a common way in which the Society lies about such things is by juxtaposing two or more sentences that, taken one at a time are true, but when strung together as if the second follows logically from the first, create a completely wrong impression in the mind of the reader. As an example, suppose you tell your friend: “I went to Paris in 2016. While in Paris I bought a gray suit.” Your friend says, “But you’ve had that gray suit since 1990!” You say, “Well, I didn’t say that I bought

⁶⁴⁵ Carl Sagan, *Broca's Brain*, 1979, pp. 332-333.

the suit in 2016.” Your friend says, “Freddie, you’re a liar!” Is your friend right? Of course, because the way you put your two sentences together implied that you bought the suit when you went to Paris in 2016. There are many examples below of this kind of lying by Watch Tower writers.

While the Society often lies about its history, its writers certainly know the truth, as shown by the fact that they occasionally *do tell* the truth. Here are a couple of examples where the Society actually tells the truth about Russell’s pre-1914 expectations:

The September 1973 *Kingdom Ministry* correctly explained (p. 5) that C. T. Russell pointed forward to the end of the Gentile Times for 1914. It says that he taught that the Greek word *parousia* applied to Christ’s “invisible presence”. It explains that, though he miscalculated Christ’s “presence” as having begun in 1874, in time his associates recognized that this “presence” began in 1914 CE.

The 1975 *Yearbook* correctly said (p. 37):

In 1877, Barbour and Russell jointly published *Three Worlds, and the Harvest of This World*. This 196-page book combined information about Restitution with Biblical time prophecies. It presented the view that Jesus Christ’s invisible presence and a forty-year period opening with a three-and-a-half-year harvest dated from the autumn of 1874.

Contrast those true statements with the following blatant lie:

For over thirty years before that date and for half a century since, Jehovah’s witnesses have pointed to the year 1914 as the time for the end of “the appointed times of the nations” and the time in which Christ would begin his Kingdom rule.—*The Watchtower*, February 15, 1966, p. 103

As the above-quoted 1975 *Yearbook* said, for over thirty years prior to 1914 “JWs” (actually, Russell and his Bible Students) **pointed to 1874** as the date of Christ’s invisible presence and the beginning of his Kingdom rule. Other Watch Tower material from the 19th century shows that they later taught that Christ began his Kingdom rule in heaven **in 1878**. Therefore, what the 1966 *Watchtower* said is a lie, because it is a *partial truth* that deliberately conveys a *false impression*. Furthermore, Russell taught that the Battle of Armageddon (or “The Lord’s Day”) began in 1874, and he held this teaching through 1914.

Here are a few more flat-out lies and misrepresentations:

As for the time of Christ’s second presence, Daniel’s prophecy is again the one that gives the chronology for it. (Dan. 4:16) It was figured out as pointing to A.D. 1914, and *The Watchtower* called notice to the significance of 1914 in the year 1879. The Christian Greek Scriptures foretell many physical evidences that would be observable at the time of Christ’s second presence, so that persons on earth would know of his presence, Christ himself being a spirit creature and invisible to human eyes. (John 14:19) Predicted were world war, famine, pestilence, earthquakes, sectarian divisions, persecution of his followers, world-wide preaching of the good news of the established Kingdom, widespread delinquency and general breakdown of morals, and many other developments that we have seen since 1914. The generation experiencing the beginning of these things will survive to see their end at Armageddon. (Matt. 24:1-34; 2 Tim. 3:1-5, 13) Thereafter eternal life in endless blessings will begin for obedient persons in a new world.—2 Pet. 3:13.—*The Watchtower*, November 1, 1952, p. 658

Once again the above-quoted 1975 *Yearbook* proves that the Society taught that 1874, not 1914, was the date for “Christ’s second presence”. The writer here deliberately mixed up the Watch Tower’s pre-1914 teachings about 1914 with what it was teaching in 1952, which were almost completely different things. Russell taught that the Bible foretold that “Christ’s presence” was to begin in 1874, not 1914. Russell taught nothing like what the Society was teaching in 1952, that the significance of 1914

was that Christ would destroy all the nations of the world *not later than* 1914, not *in* 1914, and would replace them with his own Kingdom rule. He did not teach anything about “physical evidences” such as world war, famine, pestilence, earthquakes, etc., as occurring in 1874, or that they would occur in some unusual manner beginning in 1914. He did not teach that Armageddon would occur sometime after 1914, but that Armageddon had already begun in 1874. He taught that “eternal life” was to be the reward of all faithful Christians, who were to be taken to heaven in 1914, and not just restricted to an “earthly class” of 144,000 as the Watch Tower Society taught in 1952.

Let’s look at a few other lies:

Long before 1914, faithful Bible Students (as Jehovah’s Witnesses were then known) were already pointing ahead to that year as a watershed in human history. According to the most reliable Bible chronology, this entire world system of things entered a new phase in 1914, the climactic era that the Bible refers to as “the last days.”—*Awake!*, July 8, 1989, p. 20

The Society taught until 1929 that “the last days” began **in 1799**, so this juxtaposition of two sentences that are true in isolation creates a false impression. Here are more misrepresentations in the same spirit:

As far back as 1879, the publishers of this magazine pointed to the year 1914 as a marked year in Bible prophecy, as the starting point for what the Bible calls “the time of the end.”—*Awake!*, October 8, 1972, p. 15

Jehovah’s witnesses pointed to the year 1914, decades in advance, as marking the start of “the conclusion of the system of things.”—*Awake!*, January 22, 1973, p. 8

For years God’s people had pointed forward to 1914 as the year that would mark the end of the Gentile Times. Their expectations did not lead to disappointment. On July 28, 1914, World War I erupted, and as time marched on toward October 1 more and more nations and empires got involved. As Jehovah’s Christian witnesses know from their Scriptural studies, the period of uninterrupted Gentile world rule ended in 1914, with the birth of God’s heavenly kingdom with Jesus Christ as king.—*1975 Yearbook*, p. 72

This shows just how shameless the Society’s writers can be: even though the above-quoted *1975 Yearbook* told the truth in one place on page 37, it told a lie on page 72. It also lied on page 37. Speaking of Russell’s book *Three Worlds*, it said:

Very noteworthy was the striking accuracy with which that book pointed to the end of the Gentile Times, “the appointed times of the nations.” (Luke 21:24) It showed (on pages 83 and 189) that this 2,520-year period, during which Gentile or non-Jewish nations would rule the earth without interference by any kingdom of God, began with the Babylonian overthrow of the kingdom of Judah in the late seventh century B.C.E. and would end in 1914 C.E. Even earlier, however, C. T. Russell wrote an article entitled “Gentile Times: When Do They End?” It was published in the *Bible Examiner* of October 1876, and therein Russell said: “The seven times will end in A.D. 1914.” He had correctly linked the Gentile Times with the “seven times” mentioned in the book of Daniel. (Dan. 4:16, 23, 25, 32) True to such calculations, 1914 did mark the end of those times and the birth of God’s kingdom in heaven with Christ Jesus as king. Just think of it! Jehovah granted his people that knowledge nearly four decades before those times expired.—*1975 Yearbook*, p. 37

Again we see the same dishonest mixing of pre- and post-1914 beliefs about 1914, juxtaposed so as to give the impression that pre-1914 Watch Tower “calculations” predicted what the Society began to teach well after all of Russell’s 1914 predictions failed.

The 1993 JW history book *Jehovah’s Witnesses—Proclaimers of God’s Kingdom*, billed at its introduction at the 1993 district conventions as “a candid look at the Society’s history”, ought to have cleared up any ambiguity in the minds of Watch Tower writers about just what the pre-1914 Bible Students taught with regard to their expectations for 1914. Unfortunately the book wasn’t clear about many important points. In any case, current Watch Tower writers don’t seem to have absorbed what it

did clear up. Note these examples of deliberately mixing pre- and post-1914 beliefs, and juxtapositional misrepresentations, in post-1993 *Watchtower* magazines:

Nevertheless, as the end of the 19th century approached, a sincere group of Bible students was again busy preaching and extending to ‘all creation under heaven the hope of the good news.’ On the basis of their study of Bible prophecy, this group pointed forward more than 30 years to the year 1914 as marking the end of “the appointed times of the nations,” a period of “seven times,” or 2,520 years, that began with the desolating of Jerusalem in 607 B.C.E. (Luke 21:24; Daniel 4:16) True to expectations, 1914 proved to be a turning point in man’s affairs on earth. Historic events took place in heaven as well. It was then that the King of eternity placed his associate King, Jesus Christ, upon a heavenly throne.—*The Watchtower*, April 1, 1996, p. 16

Then in the 1870’s, a group of sincere Christians began to engage in a penetrating study of the Bible. From Scripture, they were able to pinpoint the year 1914 as marking the conclusion of “the appointed times of the nations.” It was then that seven symbolic “times” (2,520 years of beastlike human rule) ended with the heavenly enthronement of Christ Jesus.—*The Watchtower*, January 1, 1997, p. 10

Most of the misrepresentative juxtapositions in these two quotations were pointed out above. However, the writer also lied about the 607 BCE date: the “sincere group of Bible students” used the incorrect 606 date. Far worse, their “expectations for 1914” were for a “turning point” far different from what actually happened in 1914 and from what the Society began teaching from 1914 onwards.

For a detailed look at what Russell and the Bible Students taught about 1914 and all the chronological details associated with it, see these links:

<https://critiquesonthewatchtower.org/old-articles/2006/02/part-1-jws-beliefs-about-chronology-in.html>

<https://critiquesonthewatchtower.org/old-articles/2006/02/some-prophetic-speculations.html>

I have documented more of these sorts of lies here:

<https://critiquesonthewatchtower.org/old-articles/2006/02/latest-wts-lies.html>

More documentation on the Society’s lies about 1914 can be found here:

<https://ad1914.com/1914-failed-watchtower-prophecy-falsified-history/>

An honest person can only shake his head at the level of hypocrisy in Watch Tower publications. While claiming on the one hand to be God’s channel of communication to mankind, and to set forth God’s thoughts in their publications, on the other hand Watch Tower leaders and writers shamelessly publish lies. Again I quote Job 13 (*New Living Translation*):

Are you defending God with lies? Do you make your dishonest arguments for his sake? Will you slant your testimony in his favor? Will you argue God’s case for him? What will happen when he finds out what you are doing? Can you fool him as easily as you fool people? No, you will be in trouble with him if you secretly slant your testimony in his favor. Doesn’t his majesty terrify you? Doesn’t your fear of him overwhelm you? Your platitudes are as valuable as ashes. Your defense is as fragile as a clay pot.

Misrepresentation of the Bible and Science

Many people argue that the Watch Tower Society misrepresents the Bible in any number of ways. Many of these complaints involve doctrinal disputes that I am not interested in. My interest is in areas where the Society misrepresents the Bible in order to defend it or misrepresents facts in order to support its claim that the Bible is divinely inspired, or is in other areas where factual evidence can be brought to bear.

Most of the misrepresentations are not out and out lies, but amount to spin that goes beyond what scholastic honesty allows. But putting spin on a narrative is just a euphemism for “small lies”, and a lie is a lie, large or small. Again note Job 13.

Let’s consider some examples of spin and outright lies.

Isaiah 40:22 — Earth a Ball or a Pizza Pie?

Watch Tower Claims

In its efforts to prove the Bible is inspired by God, the Watch Tower Society has often argued that Isaiah 40:22 displays divine knowledge by saying that the earth is shaped like a ball. In the *New World Translation* the passage reads:

There is One who dwells above the circle of the earth, And its inhabitants are like grasshoppers.
He is stretching out the heavens like a fine gauze, And he spreads them out like a tent to dwell in.

This accurately translated passage mentions *circle*—not *ball* or *sphere* or some generalized round shape—in the phrase “the circle of the earth”. We will see, using the most authoritative Hebrew reference works, that *circle* is the correct translation, and *sphere* is impossible.

As usual, the Society’s arguments are a combination of fallacies—outright falsehoods, equivocation, begging the question, special pleading, etc. In particular, Watch Tower writers engage in equivocation by trying to blur the distinction between “circle” and “sphere” by using the word “round”. They also engage in the fallacy of reading modern scientific notions into the ancient text, with no justification other than a desire to prove the Bible is inspired—exactly the argumentation technique of young-earth creationists.

Here are some typical claims:

What Is the Shape of the Earth?

In ancient times humans in general believed that the earth was flat. As early as the sixth century B.C.E., however, Greek philosopher Pythagoras theorized that the earth must be a sphere. Even so, two centuries before Pythagoras formulated his theory, the prophet Isaiah stated with extraordinary clarity and certainty: “There is One who is dwelling above the *circle* of the earth.” (Isaiah 40:22) The Hebrew word *chugh* here translated “circle” may be rendered “sphere.” Interestingly, only a spherical object appears as a circle from every angle. Far ahead of his time, then, the prophet Isaiah recorded a statement that is scientifically sound and free from ancient myths.—*Isaiah’s Prophecy—Light for All Mankind* 1, 2000, p. 412

And where did the Bible stand on this issue? In the eighth century B.C.E., when the prevailing view was that the earth was flat, centuries before Greek philosophers theorized that the earth likely was spherical, and thousands of years before humans saw the earth as a globe from space, the Hebrew prophet Isaiah stated with remarkable simplicity: “There is One who is dwelling above the *circle* of the earth.” (Isaiah 40:22) The Hebrew word *chugh*, here translated “circle,” may also be rendered “sphere.” Other Bible translations read, “the globe of the earth” (Douay Version) and “the round earth.”—Moffatt.—*Brochure A Book for All People*, 1997, p. 19

In the eighth century B.C.E., Isaiah wrote of Jehovah “dwelling above the circle of the earth.” The Hebrew “*hhug*,” translated “circle,” can also mean “sphere,” as Davidson’s “Concordance” and Wilson’s “Old Testament Word Studies” show. Hence, Moffatt’s translation of Isaiah 40:22 reads: “He sits over the round earth.”—*Awake!*, September 22, 1981, p. 25

Isaiah 40:22 reads: “There is One who is dwelling above the circle of the earth.” When this text says that God sits above the circle of the earth, this harmonizes with the fact that the earth is circular, viewed from all directions, but that also makes it globular in form. The Hebrew word *hhug* here is defined in *A Concordance of the Hebrew and Chaldee Scriptures* by B. Davidson as “circle, sphere.”—*The Watchtower*, November 1, 1967, p. 671

About 2,700 years ago, the Bible said: “There is One who is dwelling above the *circle* of the earth, the dwellers in which are as grasshoppers.” (Isaiah 40:22) The Hebrew word *chugh*, translated “circle,” can also mean “sphere,” as such reference works as Davidson’s *Analytical Hebrew and Chaldee Lexicon* show. Other translations, therefore, say “the *globe* of the earth” (*Douay Version*), and “the *round earth*.” (*Moffatt*) Thus the Bible was not influenced by the erroneous, flat-earth view prevalent when it was written. It was accurate.

Let’s look at some of the above statements in detail.

As early as the sixth century B.C.E., however, Greek philosopher Pythagoras theorized that the earth must be a sphere. Even so, two centuries before Pythagoras formulated his theory, the prophet Isaiah stated ...

According to most modern non-Fundamentalist scholars, the book of Isaiah was most likely written in two or three stages: chapters 1-39 in the 8th century BCE by the original prophet Isaiah and chapters 40 onward during or shortly after the Exile sometime in the 6th century.⁶⁴⁶ A Wikipedia article mentions one reason for this view:⁶⁴⁷

Historical situation: Chapters 40–55 presuppose that Jerusalem has already been destroyed (they are not framed as prophecy) and the Babylonian exile is already in effect – they speak from a present in which the Exile is about to end. Chapters 56–66 assume an even later situation, in which the people are already returned to Jerusalem and the rebuilding of the Temple is already under way.

Isaiah 40:1-2 certainly presupposes that Jerusalem has already been punished:

“Comfort, comfort my people,” says your God. 2 “Speak to the heart of Jerusalem, And proclaim to her that her compulsory service has been fulfilled, That her guilt has been paid off. From the hand of Jehovah she has received a full amount for all her sins.”

This passage clearly speaks of Jerusalem’s punishment as already having happened, its guilt already having been paid off in 539 BCE—the situation that existed immediately after Babylon was destroyed, according to the books of 2 Chronicles, Ezra, Jeremiah and Daniel. This fact was recognized as early as the 12th century CE by Rabbi Abraham Ibn Ezra.⁶⁴⁸

Of course, Fundamentalist organizations like the Watch Tower Society argue that Isaiah was here writing prophecy as if it were already fulfilled, that his viewpoint was some 200 years in the future from the time he wrote. But this is mere special pleading and illustrates the fallacy of assuming the conclusion, which is circular reasoning. It *assumes* that Isaiah chapter 40 really was prophetic, and therefore that words written in the present tense really refer to things that will happen 200 years hence.

Be that as it may, let’s continue examining the Society’s claims about Isaiah 40:22:

... with extraordinary clarity and certainty: “There is One who is dwelling above the *circle* of the earth.” (Isaiah 40:22) The Hebrew word *chugh* here translated “circle” may be rendered “sphere.”

⁶⁴⁶ cf. <https://www.britannica.com/topic/Book-of-Isaiah>

⁶⁴⁷ cf. https://en.wikipedia.org/wiki/Book_of_Isaiah

⁶⁴⁸ <https://www.haaretz.com/jewish/who-really-wrote-the-book-of-isaiah-1.5431430>

False. The Hebrew word *chugh* never means “sphere” either in the Bible or in any other ancient Hebrew literature. It simply means “circle”, i.e., a flat two-dimensional shape like a pizza pie. There is another Hebrew word *duwr* for “sphere” or “ball”. If Isaiah wanted to clearly communicate that the earth is a sphere, he would have used *duwr* rather than *chugh*.

Interestingly, only a spherical object appears as a circle from every angle.

So what? Isaiah says nothing about this. It speaks only of God dwelling *above* the *circle* of the earth.

This brings up an important point: the Watch Tower’s statement assumes that God dwells in outer space. Why? Because only from outer space can the view of the earth be said to be *above* the earth from any vantage point. Does God live in outer space? The Society itself answers:⁶⁴⁹

Jehovah God dwells, not everywhere, but only in heaven. Of course, **“the heavens” mentioned in these passages does not refer** to the atmosphere surrounding the earth nor **to the vast expanse of outer space**. The physical heavens cannot contain the Creator of the universe. (1 Kings 8:27) The Bible tells us that “God is a Spirit.” (John 4:24) He resides in the spiritual heavens, a realm independent of the physical universe.—
1 Corinthians 15:44.

So the Society, whose writers obviously cannot remember from one article to another what they wrote, has killed off its own argument.

But this brings up another point: since God’s viewpoint in Isaiah 40:22 is explicitly *above* the pizza pie shaped “circle of the earth”, where exactly is that viewpoint?

To the one who rides the ancient heaven of heavens. Look! He thunders with his voice, his mighty voice.—
Psalm 68:33

To the God in the heaven of heavens do we look for our future.—*The Watchtower*, February 1, 1958, p. 84.

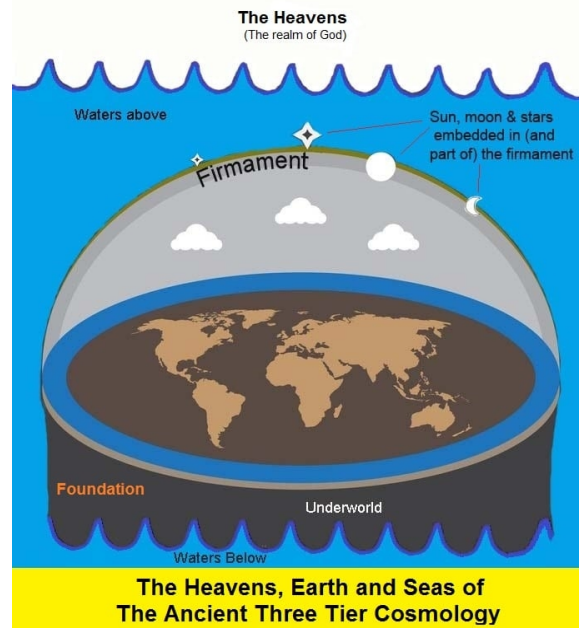
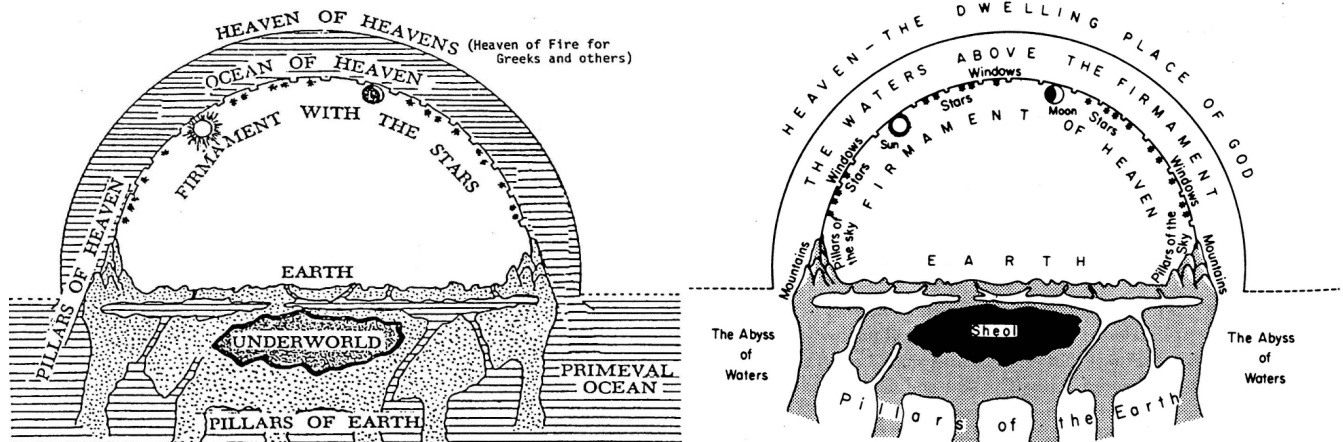
Where is this “heaven of heavens”? Not in outer space, according to the Society. Old Testament scholars who are not Fundamentalist biblical literalists have looked at every relevant Bible passage and come up with the following pictures for the structure of the world as envisioned by the Hebrew Bible writers.^{650 651 652}

⁶⁴⁹ *The Watchtower*, August 1, 2011, p. 27.

⁶⁵⁰ https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwiV0M2YvqzeAhUP0KwKHSB2B6UQjRx6BAgBEAU&url=https%3A%2F%2Fwww.webpages.uidaho.edu%2Fngier%2Fgre13.htm&psig=AOvVaw18xOco7HJrcx5lBDqIKGj_&ust=1540931058030566

⁶⁵¹ <http://photos1.blogger.com/blogger/5806/1359/1600/Cosmos.png>

⁶⁵² https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwj9jJnUgK_eAhVp5YMKHQMeBRAQjRx6BAgBEAU&url=http%3A%2F%2Fthecreationclub.com%2Fis-three-tier-flat-earth-cosmology-getting-short-shrift-from-biblical-creationists%2F&psig=AOvVaw2yfj8tz6GVGvBUddnj-Cx_&ust=1541017641184832



This is virtually the same picture as in Babylonian cosmology. So the Hebrews had God dwelling in the heaven of heavens, which was above the waters that were above the expanse (firmament; Genesis 1), which expanse was in turn above the earth (land) and “the waters below”.

With the above pictures in mind, examine Isaiah 40:22 again:

There is One who dwells above the circle of the earth, And its inhabitants are like grasshoppers.
He is stretching out the heavens like a fine gauze, And he spreads them out like a tent to dwell in.

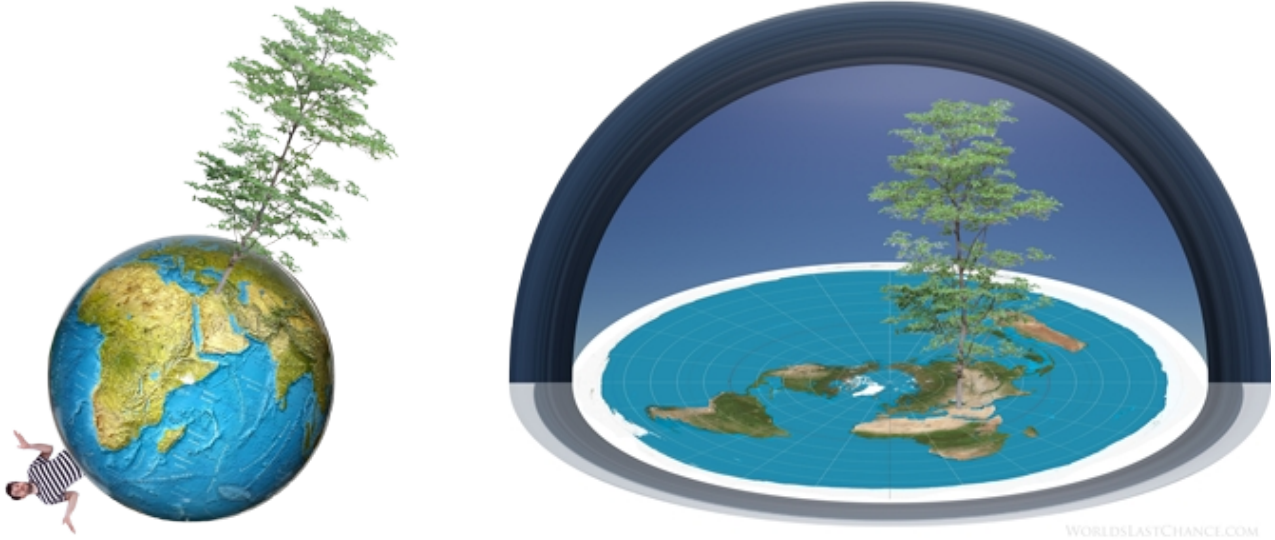
The word picture exactly matches the pictures above.

Now consider Daniel chapter 4, which describes Babylonian king Nebuchadnezzar’s dream of a huge tree. The king describes it (vss. 10-11, *NIV*):

There before me stood a tree in the middle of the land. Its height was enormous. The tree grew large and strong and its top touched the sky; it was visible to the ends of the earth.

That word picture is impossible with a spherical earth, but perfectly reasonable with a pizza pie shaped earth covered by the expanse of the sky, which as shown above is essentially the Hebrew

picture of the universe. Look at pictures of the two situations drawn by some flat-earth proponents who claim that the Bible strictly teaches a flat earth:⁶⁵³



This picture in Daniel is further strengthened by the account of the Devil’s tempting Jesus. Matthew 4:8 says:

The Devil took him along to an unusually high mountain and showed him all the kingdoms of the world and their glory.

Which of the above two images is not compatible with this word picture? If this was not the picture that Matthew wanted to paint for his audience, then why did he use it? The Devil could have showed Jesus all the kingdoms of the world by just sweeping him around the world in vision. If Jesus and the Devil knew that the earth is a sphere, why would the Devil take Jesus to the top of a tall mountain, even in vision? Matthew even emphasized that it was “an unusually high mountain”. Clearly, this word picture was for an audience that pictured the universe as shown above.

When faced with someone claiming that the above two passages prove that the Bible teaches a flat earth, many Fundamentalists, including Watch Tower writers, respond that the passages are metaphorical and do not reflect what the Bible writers actually thought was the physical shape of the earth. But if that is so, then by the same token they cannot reasonably argue that Isaiah 40:22 literally describes the shape of the earth.

Many Bible believers have discussed these points at great length.⁶⁵⁴ Only Fundamentalists support the Watch Tower Society’s claims.

Moving on with the Watch Tower’s claim about Isaiah 40:22:

Far ahead of his time, then, the prophet Isaiah recorded a statement that is scientifically sound and free from ancient myths.

⁶⁵³ <https://www.worldslastchance.com/ecourses/lessons/flat-earth-the-bible-truth-ecourse/43/biblical-evidence-for-the-flat-earth-part-3.html>

⁶⁵⁴ cf. <https://www.webpages.uidaho.edu/ngier/gre13.htm>

This claim is based on a false word translation plus circular reasoning. The earth is not shaped like a pizza pie, and the world picture is clearly borrowed from Babylonian cosmological myths.

Moving on:

... The Hebrew word *chugh*, here translated “circle,” may also be rendered “sphere.” Other Bible translations read, “the globe of the earth” (Douay Version) and “the round earth.”—Moffatt.—Brochure *A Book for All People*, 1997, p. 19

All that this shows is that other Christians are as capable of rationalization and poor scholarship as the Watch Tower Society is. Furthermore, the *Douay Version* Old Testament was published in 1609-1610, long before modern scholarship showed that *chugh* never means “globe” or “sphere”. But the *King James Version* of 1611 got it right. While James Moffatt produced a very readable complete Bible in 1926, his translation was criticized by many scholars for taking too many liberties with the text. Since no reputable modern Hebrew reference in 1926 gave a definition for *chugh* anything like the general concept “round”, Moffatt was obviously taking liberties with the original Hebrew. The Watch Tower’s use of Moffatt here is an example of the fallacy of equivocation: using the fact that a circle is round to claim that a round circle means a sphere in Isaiah 40:22.

Many Christians are honest enough to avoid the straw-grasping claims of the Watch Tower Society and other Fundamentalist groups.⁶⁵⁵ One must wonder why the religion that claims to speak for God cannot manage such honesty.

Moving on:

Isaiah 40:22 reads: “There is One who is dwelling above the circle of the earth.” When this text says that God sits above the circle of the earth, this harmonizes with the fact that the earth is circular, viewed from all directions, but that also makes it globular in form. The Hebrew word *hhug* here is defined in *A Concordance of the Hebrew and Chaldee Scriptures* by B. Davidson as “circle, sphere.”—*The Watchtower*, November 1, 1967, p. 671

Benjamin Davidson’s *Concordance* was published in 1876, and is thus out of date with respect to modern Hebrew reference works (see below). The Society has also used Davidson’s c. 1880 *Analytical Hebrew and Chaldee Lexicon* the same way.

In the eighth century B.C.E., Isaiah wrote of Jehovah “dwelling above the circle of the earth.” The Hebrew “hhug,” translated “circle,” can also mean “sphere,” as Davidson’s “Concordance” and Wilson’s “Old Testament Word Studies” show. Hence, Moffatt’s translation of Isaiah 40:22 reads: “He sits over the round earth.”—*Awake!*, September 22, 1981, p. 25

Wilson’s *Word Studies* was published in 1850, and is also out of date. He used Gesenius’ *Lexicon* for a reference (see below).

Next:

About 2,700 years ago, the Bible said: “There is One who is dwelling above the *circle* of the earth, the dwellers in which are as grasshoppers.” (Isaiah 40:22) The Hebrew word *chugh*, translated “circle,” can also mean “sphere,” as such reference works as Davidson’s *Analytical Hebrew and Chaldee Lexicon* show. Other translations, therefore, say “the *globe* of the earth” (*Douay Version*), and “the *round earth*.” (*Moffatt*) Thus the Bible was not influenced by the erroneous, flat-earth view prevalent when it was written. It was accurate.

⁶⁵⁵ Does the Bible Teach a Spherical Earth? <https://www.asa3.org/ASA/PSCF/2001/PSCF9-01Schneider.html>
 “The Circle of the Earth” Translation and Meaning in Isaiah 40:22 <http://www.crivoice.org/circle.html>
 The Biblical support for a Flat Earth and Geocentricism <http://www.skepticfriends.org/forum/showquestion.asp?faq=4&fldAuto=61>

The same scholastic dishonesty is in evidence here as is shown above, except that Davidson's *Lexicon* is referenced. Published in 1848, it is also obsolete. Like the other 19th-century references, it gives no examples of *chugh* being translated as "sphere" in the OT.

The use of obsolete 19th-century Hebrew reference works while ignoring modern works is scholastically dishonest. None of these references give an example from the Hebrew Scriptures where *chugh* means "sphere" or anything other than "circle". Nor do they give any examples of "sphere" in non-OT Hebrew literature. No 20th-century lexicons give this meaning. The problem with the old lexicons is that they derive the meaning "sphere" from Job 22:14 and Isaiah 40:22, where the passages are merely *assumed* to mean "sphere" by certain Bible translators. Then they plop that meaning back into the definition for the Hebrew word.

An even older 19th-century lexicon, by Gesenius (published in stages from 1810 (German) to 1847 (English)), seems to be the source for these incorrect definitions. It too uses a circular argument based on Job 22:14 and Isaiah 40:22, i.e., "we know that the earth is a sphere, and it seems to us that these passages refer to the shape of the earth; thus *chugh* can mean 'sphere'."⁶⁵⁶

The fact that the Society knows that the definition given in these references cannot be defended is proved by the fact that it never tries to defend it. It simply quotes the wrong definition and, as usual, relies on the fact that its JW readers will not question what it writes.

Modern Lexicon Definitions of Hebrew *Chugh* — Circle

Let's see what several good Hebrew references say about the word.

The *Brown-Driver-Briggs Lexicon*⁶⁵⁷ has an entry for the Hebrew word *huwg*, as a verb: "draw round, make circle ... *circle, vault of heavens* ... Jb 26:10 (cf. Pr 8:27), *hath drawn as circle bound, of horizon-line.*" As a noun, *BDB* has the entry: "vault, horizon; of the heavens, sea and earth ... Jb 22:14; ... Pr 8:27 ... Is 40:22" We will come back to this shortly.

Strong's Concordance has for this word, under entries 2328 and 2329: "*chuwg*: to describe a circle:—compass; a circle:—circle, circuit, compass".

The *NIV Exhaustive Concordance* has for entry 2553: "*hug*: circle, horizon, vaulted".

Using the meaning "vault" in Isaiah 40:22 results in gibberish: "... one who is dwelling above the *vault* of the earth". The meaning "vault" is found in some bible translations in only one place — Job 22:14:

He goes about in the vaulted heavens. *NIV*

However, the *King James Version* reads:

He walketh in the circuit of heaven. *KJV*

So which is a better translation—"the vault of heaven" or "the circuit of heaven"? The modern *Theological Dictionary of the Old Testament* by Botterweck and Ringgren (Vol. IV, 1980, pp. 244-247) has for the entry "*chugh*:"

I. Etymology. The root *chugh* is attested six times in the OT: Isa. 40:22; 44:13; Job 22:14; 26:10; Prov. 8:27; Sir. 43:12 (cf. Sir. 24:5; 1QM 10:13)... Structurally, *chugh* belongs with the words built on the basic syllable *hg*,

⁶⁵⁶ <https://www.jehovahs-witness.com/topic/48029/round-earth>

⁶⁵⁷ Francis Brown, et al. *A Hebrew and English Lexicon of the Old Testament*, 1907; 1972 revised reprint.

[various derived words are given] ... Most of these appear to incorporate the semantic element of circular movement.

The association with *chaghagh/chagh* or the *hg* formations in general, the fact that the word appears only in Hebrew and relatively late (exilic period, Deutero-Isaiah), and the highly specialized meaning “circle” or the like in specific contexts all suggest that *chugh/mechughah* are late secondary developments under the influence of Babylonian technology and cosmology, or are technical terms.

II. Meaning.

1. *Within its Semantic Field.* Within the semantic field of “circles and circular motion,” the meaning of *chugh* exhibits a highly specific profile. In contrast to the usual expressions for “turn, circle, go around, surround,” ... and *chaghagh*, which designates the festival dance and procession, the verb *chugh* in combination with *choq* means “describe a circle,” i.e., “incise a circular line.”

Similarly, there are several words within the semantic field of the noun *chugh*. The word *dor* has a wide range of meanings: “ball,” “cycle, lifetime, generation” (most frequent), and (as the Akkadian loanword *duru*) “ring, city wall, dwelling,” all within the semantic field “turning, enclosure, circumvallation, ball”; ...

Within this semantic field, *chugh* is distinguished by its specifically geometrical meaning, which can be observed on the one hand from its association with spatial referents (earth, heavens, ocean) and its combination with *choq*, “(incised) line,” and on the other from its connection with *mechughah*, “compasses.” **The word thus means “circle, as drawn with compasses.”**

Next, *TDOT* comments on “vault”:

The often suggested translation “vault (of the heavens)” is therefore probably incorrect, as is the less frequent suggestion “disk (of the earth).” The notion of a “vault” derives from ancient Near Eastern cosmology with its bell-shaped heaven. For *chugh* this translation cannot really be supported by the parallelism in Job 22:14 (“thick clouds enwrap him”): clouds can also cover the “horizon of the heavens.” Furthermore, where does the “walking” take place if not on the level ground (cf. Sir. 24:5)? Isa. 40:22b makes this meaning unlikely in v. 22a. At most, the idea of horizon circles may be attenuated in Job 26:10. In Sir. 43:12, *chugh haqqiphah* means “describe a proper circle” (said of the rainbow); only the LXX with its circumstantial rendering introduces the “heavens.”

2. *In Translation.* To render *chugh*, the LXX strangely uses the rare word *gyros*, “ring, circle,” used especially for a circular trench around a tree, *gyroo*, “bend, make round, make a circular trench” (cf. *gyrosis*). The image conveyed by this word appears to express the classic Babylonian idea of the ring of water surrounding the earth’s surface (cf. Sir. 24:5; 43:12 twice, used differently in Prov. 8:27).

Finally, *TDOT* comments on specific usage:

III. Usage. The use of *chugh* is characterized by: (1) a typical fixed context; (2) an association with cosmological ideas; and (3) hymnic style.

1. *Context.* Twice *chugh* is found together with *choq* (Job 26:10; Prov. 8:27); the interchangeability of the two terms (*choq chagh* and *bechuqo chugh*) suggests a fixed idiom meaning “incise a circle,” with the aid of the instrument used by the Babylonian carpenter in Isa. 44:13, together with line and *seredh* (“pencil”?), to sketch out his work. In each of its occurrences, *chugh* is determined by a genitive (*ha’arets*, Isa. 40:22; *shamayim*, Job 22:14) or by the expression “upon the face of the waters/deep” (Job 26:10; Prov. 8:27). **In other words, its meaning is limited to the circle of the earth or heavens (the rainbow in Sir. 43:12), i.e., the horizon, in the double sense of the coastline on either side of the primeval river that circles the entire earth and separates it from the realm of the heavens** (cf. *chugh yammim*, 1QM 10:13).

2. *Cosmology.* This notion of two concentric circular coastlines, that of the earth disk and that of the heavenly mountain island, is directly evident in Babylonian cosmology, as reflected, for example, in the Sippar world map (6th/5th century, with earlier prototypes). According to the inscription, the two circles incised about the earth on the clay tablet designate the “bitter river,” the ocean, in which the circular earth lies like an island and beyond which rise the “regions” of the heavenly mountains. In the OT passages, *chugh* refers to these cosmic circles. This usage presupposes the same cosmological borrowing of a geometrical model as is found in the Babylonian

world map. There must be some kind of dependence, since the notion of two horizon circles—especially in mountainous Palestine—presumably does not derive from empirical observation.

3. *Creation Hymns*. In the OT, the ideas associated with the horizon circles are integrated with the belief in creation. At least four of the five occurrences are in creation hymns (Prov. 8:27; Isa. 40:22; Job 26:10; Sir. 43:12; cf. 1QM 10:13; Job 22:14 close to hymnic style). The process of creation is addressed in Job 26:10; Prov. 8:27; Sir. 43:12, the relationship between the Creator and his creation in Isa. 40:22 and Job 22:14 (cf. Sir. 24:5). The vivid technical and cosmological imagery suggested by *chugh* stands each of the passages in good stead. The hymnic fragment recorded in Isa. 40:22ff. extols him “who sits above the circle of the earth,” which he himself laid out (with compasses), over which he stretched the heavens like curtains, like a tent; within this circle he set plants as in a bed (v. 24), i.e., the inhabitants of the earth, who appear to him, the Creator, like “grasshoppers” (*kachaghabhim*, v. 22). Job 22:14 criticizes the expression of resignation that God the Creator “walks on the circle of the heavens” (cf. Sir. 24:5), i.e., stays beyond the river, in the heavenly regions, seeing but not judging (vv. 13f.). Job 26:10 and Prov. 8:27 recount the creation of the world. In Prov. 8:27, *chugh* appears in the context of “establishing the heavens” (vv. 27f.) and refers to the circular foundation of the heavenly horizon in contrast to *tebhel ’erets* (vv. 26,31; *chuq* in vv. 27,29). The verb *chugh* in Job 26:10 (cf. v. 11) probably refers to the same heavenly circle, which, as the boundary of the water, serves also as the boundary between light and darkness. Finally, Sir. 43:12 links *chugh* with the rainbow, as though drawn with compasses, and thus goes beyond the narrower limits of the other occurrences.

So at the very least, given the above material, Isaiah 40:22 cannot be used to claim that the ancient Jews knew that the earth is a sphere. Indeed, the available evidence is strongly in favor of the view that they thought the earth was a flat, circular disk bounded by “the circle of the earth” and “the circle of the heavens”, i.e., the horizon.

But even if the ancient Jews knew that the earth is spherical, that means little, because at least by the 6th century BCE, and probably much earlier, many of the more astute thinkers of ancient civilizations knew it. As the Society has acknowledged, the Greek scholar Pythagoras of the 6th century BCE, knew it. Many other Greek thinkers knew it as well, including Anaxagoras (5th cent. BCE), Aristotle and Aristarchus (4th cent. BCE), Eratosthenes (3rd cent. BCE; he actually measured the diameter of the earth to within 12% of the correct value), Hipparchus (2nd cent. BCE), and Ptolemy (2nd cent. CE). There is even evidence (not great, but not dismissable) in certain mathematical texts⁶⁵⁸ that some of the ancient Sumerians, in the 3rd millennium BCE, and the Egyptians in the 2nd or 3rd millennia BCE, may have known that the earth is spherical.⁶⁵⁹

The Greeks knew many things that apparently other ancient peoples didn’t, but they seem to have gotten some of their knowledge from even more ancient peoples. An interesting example of this was the discovery reported in the *New York Times* of January 8, 1950 that the ancient Sumerians were familiar with what later became known as the Pythagorean Theorem:

Baghdad, Iraq. The discovery here two months ago that school boys of the little Sumerian county seat of Shadippur about 2000 B.C. had a “textbook” with the solution of Euclid’s classic triangle problem seventeen centuries before Euclid has resulted in a summons from the Iraqi Directorate of Antiquities to United States archaeologists.

There is evidence that clay “textbooks” of the schoolboys of Shadippur contain an encyclopedic outline of the scientific knowledge of their time, which will necessitate a sharp revision of the history of the development of science, and, accordingly, of the story of the development of the human mind...

⁶⁵⁸ <https://www.britannica.com/science/Pythagorean-theorem> https://en.wikipedia.org/wiki/Pythagorean_theorem
http://www-groups.dcs.st-and.ac.uk/history/HistTopics/Babylonian_Pythagoras.html
<https://www.nytimes.com/2010/11/23/science/23babylon.html> https://en.wikipedia.org/wiki/Babylonian_mathematics
<http://web.cs.ucla.edu/~klinger/dorene/math1.htm>

⁶⁵⁹ <http://www.talkorigins.org/indexcc/CH/CH131.html> The situation might have been like that in Greece, where a handful of careful thinkers, like Pythagoras, who knew of the earth’s sphericity, were aware of physical realities not reflected in religious beliefs or those held by the common people.

Even now, the famous clay tablet on which the basic geometrical problem was presented about 4000 years ago is so clear that it takes a layman back to the days when he puzzled over his own geometry test. Not a line of the drawing is faded in the baked clay nor is a word of the text, which only cuneiform specialists can understand. The chief cuneiform expert ... says that the presentation of the famous solution of the problem is tinged with algebraic concepts that appeared even later than Euclid in the development of Western mathematical science.

Besides this tablet, there is another, presenting a catalogue of mathematical problems. According to experts now studying the material, it suggests that mathematics reached a state of development about 2000 B.C. that archaeologists and historians had never imagined possible...

So even if some Bible writers really had in mind the true shape of the earth, the fact that other ancient peoples knew it does not prove anything about the Bible's inspiration or lack thereof.

What the Bible Actually Says About the Shape of the Earth

Now, what does the Bible *really* say about the shape and physical situation of the earth? As shown above, nowhere does it say that it is spherical. All of its references indicate a flat, circular shape like a pizza pie sitting on solid foundation pillars of some sort. Let's look or look again at what a few more scriptures say, to get the general flavor.

Daniel 4:10-11 relates Nebuchadnezzar's dream (*New World Translation*):

In the visions of my head while on my bed, I saw a tree in the midst of the earth, and its height was enormous. The tree grew and became strong, and its top reached the heavens, and it was visible to the ends of the whole earth.

The word "midst" means "middle" or "center". Consistent with this, other Bible versions say "a tree in the middle (or center) of the earth". This verse says that the tree was visible to the extremity of the whole earth, and therefore, as illustrated above on page 298, paints a picture of a flat, circular earth. The tree stood in its center and had its top in the heavens so as to be visible from all over the earth. This would be impossible on a spherical earth. But the picture is completely consistent with the idea that God "is dwelling above the circle of the earth".

The vision given to Nebuchadnezzar by God, says the Society, is a major prophecy of the Bible. Why would God give a prophecy of such importance using an incorrect picture of the shape of the earth?

If Daniel and his contemporaries had a mental picture of the earth as a sphere, and the vision pictured the earth as a sphere, what part of the earth could be called the center? How could a tree of any height be visible to its extremities? If Daniel had a mental picture of the earth as a sphere, and the vision pictured the earth as a flat circle with the tree in its center, would not Daniel and his readers have been confused? Where would Daniel have understood the center of a spherical earth to be? The logical conclusion is that Daniel's mental picture and the vision from God were consistent, and therefore that the scripture suggests the picture the Bible writers had of the shape of the earth: a flat, circular area large enough to hold all the kingdoms known to the Bible writers, with the heavens a hemispherical vault nestled down over the earth, not unlike the picture in Greek mythology. If one says that this scripture is just using picturesque language, then equally well can it be argued that Isaiah 40:22 is as well, which invalidates the Watch Tower's argument that the passage is describing the physical earth. *The Interpreter's Bible* argues similarly.⁶⁶⁰

... the ancient Oriental conception of the world tree ... was commonly conceived of as being on the navel of the earth, and so *in the midst of the earth*. In those days the earth was thought of as a disk, with the heavens as an

⁶⁶⁰ *The Interpreter's Bible*, Vol. 5, Abingdon Press, New York, 1956, p. 410

upturned bowl above it; thus the tree is pictured as growing in the center of the land mass of this disk and extending upwards until its top touched the vault of heaven, in which case, of course, it would be visible from any point along the edge of the land mass.

As mentioned above, the picture in Daniel is further strengthened by the account of the Devil's tempting Jesus. Matthew 4:8 says:

The Devil took him along to an unusually high mountain and showed him all the kingdoms of the world and their glory.

Again the picture is that all the kingdoms of the world could be viewed from a sufficiently high mountain, which is not possible on a spherical earth. If this were not the intended picture, then why was it used? The Devil could have showed Jesus all the kingdoms of the world from anywhere at all.

With this picture of a flat, circular earth in mind, note how Isaiah 40:22 makes complete sense:

There is One who dwells above the circle of the earth, And its inhabitants are like grasshoppers.
He is stretching out the heavens like a fine gauze, And he spreads them out like a tent to dwell in.

This scripture, and the picture of a flat, circular earth with a roof over it, also make sense as rendered in other Bible translations. These are typical:

It is he who sits above the circle of the earth.—*English Standard Version*
God sits throned on the vaulted roof of the earth.—*The New English Bible*

There is nothing in Isaiah 40:22 to conflict with the picture of a flat, circular earth covered by a sky dome. Other scriptures give a similar picture, the same as given in Genesis 1 where the sky is defined as an expanse spread in two dimensions over the land. Job 22:14 says of God:

... As he walks about on the vault of heaven.—*NWT*
... he walketh in the circuit of heaven.—*King James*
... he prowls on the rim of the heavens.—*The Jerusalem Bible*

Job 37:18 says the heavens are hard like a metal mirror:

With him can you beat out the skies hard like a molten mirror?—*NWT 1984*
Can you beat out the vault of the skies, as he does, hard as a mirror of cast metal?—*The New English Bible*
Hast thou with him spread out the sky, which is strong, and as a heavy metal mirror?—*King James*
Will you ... Be with him to consolidate heavens strong as a metal mirror?—*The Bible in Living English*
Can you help him to spread the vault of heaven, Or temper that mirror of cast metal?—*The Jerusalem Bible*

As to viewing the vault of heaven as a thin metal sheet, Isaiah 34:4 mentions:

And the heavens must be rolled up, just like a book scroll.—*NWT 1984*
... and the skies will curl back like a roll of paper.—*The Bible in Living English*

This picture is much like that given in Revelation 6:14:

And the heaven departed as a scroll that is being rolled up.—*NWT*

The Interpreter's Bible, Vol. 5, says concerning the word pictures in Isaiah 40:22:

The earth is conceived as a dome. In Prov. 8:27 the circle (*hu'gh*) is the "vault over the face of the abyss" (*teh'om*); in Job 22:14 Yahweh walks upon the vault of the heavens.

Of course, the sky is immaterial. What we perceive as a solid dome over our heads is simply the scattering of blue light from white sunlight by the atmosphere, and that perceived dome is what many scriptures refer to, as shown above. These scriptures might be viewed as using allegory or poetic license to make a point, but not as a literal statement of the shape of the earth or the composition of the heavenly roof. But this is precisely the point about Isaiah 40:22. In fact, the scripture makes absolutely no sense if interpreted completely literally and with the idea that Isaiah had in mind a spherical earth: as mentioned above, the idea that God is sitting “above” the spherical earth means that he is somewhere in outer space. One can certainly interpret the idea of “above” as allegorical, but that kills the claim that Isaiah’s words prove that he knew the earth is spherical.

The evidence in the Old Testament itself shows this:⁶⁶¹

The Israelite world view is the same as that generally held throughout the ancient Near East, according to which the earth is a disk resting in the ocean on foundations or pillars. This world view is expressed, e.g., in the verbs used to describe creation, *yasadh* and *raqa’*. The earth has four corners (*kanephoth ha’arets*, Isa. 11:12; Ezk. 7:2; Job 37:3; 38:13; ...), or an edge or hem (*kanaph*, Isa. 24:16), an end (*qatseh*, Dt. 28:49; Isa. 5:26; 42:10; ...) or ends (*qetsoth* ...), sides or remote parts ...

Here are other biblical passages that refer to the sky and the land resting on something solid like pillars:

When he prepared the heavens, I was there; When he marked out the horizon on the surface of the waters, When he established the clouds above, When he founded the fountains of the deep, When he set a decree for the sea That its waters should not pass beyond his order, When he established the foundations of the earth—Proverbs 8:27-29, NWT 2013

When he prepared the heavens I was there; when he decreed a circle upon the face of the watery deep, when he made firm the cloud masses above, when he caused the fountains of the watery deep to be strong, when he set for the sea his decree that the waters themselves should not pass beyond his order, when he decreed the foundations of the earth—Proverbs 8:27-29, NWT 1984

Where were you when I founded the earth? Tell me, if you think you understand. Who set its measurements, in case you know, Or who stretched a measuring line across it? Into what were its socket pedestals sunk, Or who laid its cornerstone?—Job 38:4-6

The pillars of heaven tremble and are astonished at his reproof.—Job 26:11

To Jehovah belong earth’s supports, And he places the productive land upon them.—1 Samuel 2:8

Back and forth the earth began to shake and rock; The foundations of the heavens trembled, And shook back and forth because he had been angered.—2 Samuel 22:8

He shakes the earth out of its place, So that its pillars tremble.—Job 9:6

When the earth and all its inhabitants were dissolved, It was I who kept its pillars firm.—Psalm 75:3

He has founded the earth upon its established places; It will not be made to totter to time indefinite, or forever.—Psalm 104:5

To Jehovah belong the earth and that which fills it, The productive land and those dwelling in it. For upon the seas he himself has solidly fixed it, And upon the rivers he keeps it firmly established.—Psalm 24:1-2

Long ago you laid the foundations of the earth, And the heavens are the work of your hands.—Psalm 102:25

The notion of primeval waters being the basic structure of the universe is seen throughout the Old Testament. In Genesis, these primeval waters exist before anything else, and dry land is brought forth out of them:

⁶⁶¹ TDOT, Vol. I, pp. 395-396.

And God went on to say: “Let the waters under the heavens be brought together into one place and let the dry land appear.”—Genesis 1:9

The dry land, or earth, now rests on or in the waters below the expanse of heaven:

To the One laying out the earth above the waters—Psalm 136:6

And, as shown above, this land or earth rests immovably on solid pillars, which are somehow fixed in these primeval waters that are under the earth.

Given the above evidence, it is clear that the Bible nowhere states that the earth is a globe, and that the Watch Tower Society’s efforts to argue otherwise are based on wishful thinking, false claims, special pleading, and a variety of other fallacies.

The Society often combines its claim about Isaiah 40:22 with a claim that the book of Job describes the earth as an object suspended in outer space. It then concludes that only divine inspiration could be the source of this information. But we will see that its arguments about this are as wrong headed as its arguments about a spherical earth.

Job 26:7 — God Hangs the Earth Upon Nothing

Job 26:7 has been discussed a great deal by Bible scholars. None aside from Fundamentalists conclude that it, in conjunction with Isaiah 40:22, says that the earth is a sphere hanging on nothing in outer space. This claim is a blatant fallacy and a fine example of eisegesis—using modern science to read into an ancient text what is simply not there.

Watch Tower Claims

Here are some typical Watch Tower claims:

The Bible also speaks of God as “hanging the earth upon nothing,” or he “suspends earth in the void,” according to *The New English Bible*. (Job 26:7) In view of the knowledge available in 1600 B.C.E., roughly when those words were spoken, it would have taken a remarkable man to assert that a solid object can remain suspended in space without any physical support.—*The Watchtower*, April 1, 2005, p. 7

The Bible, at Job 26:7, speaks of God as “hanging the earth upon nothing.” Science says that the earth remains in its orbit in space primarily because of the interaction of gravity and centrifugal force. These forces, of course, are invisible. Therefore the earth, like other heavenly bodies, is suspended in space as if hanging on nothing.—*Insight*, Vol. 1, “Earth”, p. 668

Job 26:7 describes Jehovah as “hanging the earth upon nothing.” Scientists today attribute the earth’s position in space primarily to the interaction of the law of gravity and the law of centrifugal force.—*Insight*, Vol. 2, “Law”, p. 212

Nearly 3,500 years ago, the Bible stated with extraordinary clarity that the earth is hanging “upon nothing.” (Job 26:7) In the original Hebrew, the word for “nothing” (*beli-mah*) used here literally means “without anything.” *The Contemporary English Version* uses the expression, “on empty space.” A planet hanging “on empty space” was not at all how most people in those days pictured the earth. Yet, far ahead of his time, the Bible writer recorded a statement that is scientifically sound.—Brochure *A Book for All People*, 1997, p. 20

The Bible simply stated (in about the year 1473 B.C.E.): “[God is] hanging the earth *upon nothing*.” (Job 26:7) In the original Hebrew, the word for “nothing” used here means “not any thing,” and this is the only time it occurs in the Bible. The picture it presents of an earth surrounded by empty space is recognized by scholars as a remarkable vision for its time.—Brochure *What Is the Purpose of Life? How Can You Find It?*, 1993, p. 11

Consider, for example, what the Bible says about our planet, the earth. In the book of Job, we read: “[God] is stretching out the north over the empty place, hanging the earth upon nothing.” (Job 26:7) Compare this with

Isaiah's statement, when he says: "There is One who is dwelling above the circle of the earth." (Isaiah 40:22) The picture conveyed of a round earth 'hanging upon nothing' in "the empty place" reminds us strongly of the photographs taken by astronauts of the sphere of the earth floating in empty space.—*The Bible: God's Word or Man's?*, 1989, p. 99

Rather than reflect the fanciful, unscientific views existing at its time of writing, the Bible simply stated: "[God] is stretching out the north over the empty place, *hanging the earth upon nothing*." (Job 26:7) Yes, over 3,000 years ago the Bible correctly noted that the earth has no visible support, a fact that is in harmony with the more recently understood laws of gravity and motion.—*Life—How Did It Get Here? By Evolution or by Creation?*, 1985, p. 200

Note that the Greek philosopher Anaximander (ca. 6th century B.C.E.) also thought that the earth was hung upon nothing. He conceived of the earth as a cylinder, suspended on nothing at the center of the sky, which was a hollow sphere surrounding the earth.⁶⁶² So the Bible's supposed reference to the earth hanging on nothing is not unique. But the notion of what Job meant here is extremely problematic.

Above, we saw that every reference in the Bible to the shape of the earth indicates a flat, circular form—not a sphere—covered by the dome of the sky and surrounded on all sides by water. So if the Bible's reference to God's "hanging the earth upon nothing" is literal, it is not far from Anaximander's idea.

The book of Job, in the scriptures quoted above, obviously uses both figurative and literal language; any conclusions showing which it is using in any particular case are open to a great deal of argument and may be biased by the prejudices of whoever is making the arguments. In other words, the Bible cannot be used to prove anything about what its writers believed about the shape of the earth.

So, what does Job 26:7 actually mean? This requires some discussion, but first let's look the passage along with related ones:

He is stretching out the north over the empty place, hanging the earth upon nothing.—Job 26:7

Those impotent in death keep trembling beneath the waters and those residing in them.—Job 26:5

He has described a circle upon the face of the waters, to where light ends in darkness.—Job 26:10

The very pillars of heaven shake, and they are amazed because of his rebuke.—Job 26:11

Job 26:5 is talking about the dead, those who the OT elsewhere describes as being in "Sheol", "the pit". But if these dead are "beneath the waters", what "waters" is Job talking about? Obviously, the waters beneath the earth (look at the diagram on page 297 to get a picture). On the other hand, if the passage is to be viewed metaphorically, then one cannot consistently claim that anything else in these passages is literal.

Job 26:10 was covered above, and clearly describes the horizon.

Job 26:11 refers to the "pillars of heaven". Once again a literal interpretation leads to physical nonsense, but a metaphorical one is poetically sensible.

So what are we to make of Job 26:7 and its reference to "hanging the earth upon nothing"? Let's examine the entire passage. It first says that God is "stretching out the north over the empty place", and then it says that he is "hanging the earth upon nothing". In typical Hebrew poetic fashion, the author uses two different but closely related phrases to say essentially the same thing. This is a common device in Hebrew poetry and serves to emphasize whatever the author is saying.

⁶⁶² *The Watchtower*, October 1, 1980, p. 11

With that in mind, “the north” is most likely a parallel for “the land and sky”, and “the empty place” is a parallel for “nothing”. “The empty place” is translated from the same Hebrew word *tohu* used in Genesis 1:2: “The earth proved to be formless (**tohu**) and waste (**bohu**) ...” So God stretched out the north over the “formless thing”, if you will. What was this “formless thing” that was also “waste”? Most commentators say that it was the “watery deep” (*tehom*), i.e., the primeval waters that God eventually organized into the world in which mankind lives. Now, “nothing” in Job 26:7 is translated from two Hebrew words that literally mean “not what” or “no thing” or “not anything” or “nothing” (*beliy-mah*). This is completely parallel with “formless thing” and “waste”. Furthermore, “formless” (*tohu*) is closely related etymologically to “watery deep” (*tehom*).

Putting all this together, it is quite obvious that the author of Job was saying that the combination of land (*'erets*; earth) and sky (*shamayim*; heavens) is “stretched out” or “hanging” upon the “watery deep”, or upon “no thing” or “nothing”. Look again at the pictures I gave above and one will get a clear picture of this.

So, far from Isaiah 40:22 plus Job 26:7 stating that the earth is a sphere hanging in outer space (of which the Bible writers had no conception), it is really saying that the earth is somehow floating upon the nothingness of the primeval waters of Genesis (see page 306). This nothingness is not outer space, nor is it the “nothing” or vacuum that we moderns commonly think of as comprising outer space. Rather, it is the nothingness of the primeval waters of chaos, as described in more detail below.

Scholarly References on “Circle” and “Hanging Earth on Nothing”

The Cambridge Bible Commentary on the New English Bible, on The Book of Job, (1975, pp. 135-137) quotes Job 26:7 as:

God spreads the canopy of the sky over chaos and suspends earth in the void.

It comments:

7. canopy of the sky translates a Hebrew term meaning ‘North’ in its cosmic sense. The ‘spreading’ out of the ‘North’ is equivalent to pitching the heavens as a cosmic tent in which God reigns and appears in celestial splendour (cp. on 9:8; Pss. 104:2; 144:5; Isa. 40:22)... The cosmic tent or canopy of heaven is pitched over the primordial chaos upon which the earth is founded. The pitching of heaven and the founding of earth are recurring traditions which are coupled to express the establishment of the basic structures of the universe (Isa. 42:5; 45:11-12; 48:12-13; 51:13, 16). The earth is usually portrayed as having its foundations fixed in the chaos water. This verse describes that act as ‘suspending earth’ in a formless void (cp. Gen. 1:2). There is no reason to believe that the author of Job espoused a modern cosmology which viewed the earth as floating in space (cp. verse 11 and 38:4-7).

The next phrase in Job 26:7 is extremely problematic. While the 2013 *NWT* uses the phrase “empty space”, the original *NWT* used “the empty place”. Why the switch? I’d guess that the reason is that “empty space” is more in line with the Watch Tower’s tradition that Job 26:7 is describing the physical configuration of the earth and outer space. But that is translating Bible words to fit a preconceived tradition—eisegesis—which is dishonest.

Again we find that the original Hebrew concept here translated as “the empty place” is not well understood. Exactly the same Hebrew word, *tehom*, is used in many places in the OT, such as in Genesis 1:2 where the *NWT* translates it as “the watery deep”. What *tehom* ought to be translated as is therefore a subjective opinion of the translators.

The *NWT* translates *tehom* into the phrases “the empty place” or “empty space”, which to the naive sounds an awful lot like a reference to the modern notion of “outer space”, but it has nothing to do with

“outer space”. Rather, as the *NWT*’s translation of Genesis 1:2 indicates, it means something like “the watery deep”. Other translations and various Bible commentaries variously use “chaos”, “deep”, “deep water”, “deep [primeval ocean that covered the unformed earth]”, “watery depths”, “deep sea”, “ocean”, “roaring ocean”, “ocean depths”, “abyss”, etc. In other words, *tehom* basically denotes “the primeval waters in the creation accounts of the ancient Near East” (*TDOT*).⁶⁶³ This reference states that the significance of these primeval waters “indicates a mythological dimension. Behind all the various cosmogonies stands the shared notion that the world was created from water and that the earth from its first beginnings was surrounded on all sides by water.” This reference further states (p. 577):

Meaning. The religio-historical evidence makes it unlikely that in the OT *tehom* denotes primarily a “natural phenomenon.” Despite all the differences between the ancient Near Eastern cosmogonies and the ideas of the OT, *tehom* represents both the cosmic waters surrounding the earth and the primeval waters. Tromp has summarized its meaning quite accurately: “Hebrew *tehom* is a vigorous and often grim word, which never entirely renounced its mythical past. A primordial strength pervades *tehom* throughout. It stands for: a) the primeval ocean; b) the waters round the earth after creation, which continually threaten the cosmos; c) these waters as a source of blessing for the earth.”

TDOT further states (p. 578):

Creation. The various meanings of *tehom* in the OT are still best explained through their place and function in the texts having to do with creation. According to Ps. 104, in the beginning the *tehom* covered the earth “like a garment,” and its waters stood “above the mountains” (v. 6)... Gen. 1:2 is the passage most often discussed in connection with *tehom*. Here *tehom* is among the elements that characterize the state of the world before creation, a state defined initially (v. 2aa) as *tohu wabohu*. That P, like Ps. 104, is drawing on traditional ideas is indisputable. The analogous association of “darkness,” “deep,” “wind,” and “water” in various ancient Near Eastern cosmogonies suggests the same conclusion. Here *tehom* is the primeval deep covered with darkness ... For P the mythical dimension resides only in the use of *tehom* for the unrestrained, chaotic waters prior to creation, which then appear as *mayim* and, by virtue of God’s command, are assigned their appropriate place in the world (vv. 6,9).

And further (pp. 578-579):

The need to restrain the primeval waters in the context of creation is also mentioned in Ps. 33:7 and Prov. 8:27-29. According to Prov. 8:22, wisdom was the first of God’s works of creation. This statement is amplified in v. 24 by a clause saying that wisdom was brought forth “when there were as yet no depths” ... Wisdom was present when Yahweh “established the heavens, ... when he drew a circle on the surface of the deep ... The passage reflects the notion, influenced by Babylonian cosmogony, that the earth is a disk surrounded and bounded by the primeval ocean, with the dome of the heavens fixed above.

For the usage of *tehom* in Genesis 1:2, the *NWT With References* (1984, p. 15, ftn. 2) states:

“Watery deep.” Or, “surging waters; water canopy.” Heb., *tehom*; LXX, “the abyss”; Vg, “the great abyss.” See 1:2 ftn, “Deep.” According to 1:7 these must have been “the waters that should be above the expanse.” Compare 6:17 ftn, “Deluge.”

Interestingly, the *NWT With References* has several cross references on *tehom* for Gen. 1:2, but none for Job 26:7. And Watch Tower literature contains many discussions of the phrase “hanging on nothing”, but none of “stretches out the north over the empty place.” Obviously the Watch Tower Society is unwilling to commit itself to any explanation of the latter, while at the same time declaring that it knows for certain that the passage is saying that the earth is suspended in outer space.

For *tehom* in Job 26:7, other Bible translations use “empty place”, “empty space”, “emptiness”, “chaos”, “void”, “desolation”, etc.

⁶⁶³ Botterweck, et al., *Theological Dictionary of the Old Testament*, Vol. XV, 2006, p. 575.

So at this point, given the above information, we can potentially translate the first part of Job 26:7 in various ways, since the meaning of the original Hebrew words is so poorly known. Several possibilities are:

- He stretches out the sky over the void.
- He stretches out the sky over the watery deep.
- He stretches out the heavens over chaos.
- He stretches out the sky over the deep primeval ocean that covered the unformed earth.
- He stretches out the heavens over the ocean.
- He stretches out the sky over the abyss.
- He stretches out the heavens over the empty place.
- He stretches out the heavens over empty space.
- He spreads the canopy of the sky over chaos.

Clearly, then, none of these expressions describe literal reality, but are metaphors that vaguely refer to some Hebrew conception of reality that we have no clear descriptions of.

However, we do have some indications of what the Hebrew Bible writers viewed as reality, in various Bible passages that strongly hint at their view of the shape of the earth and its place in creation. As mentioned above by *TDOT*, the Hebrew conception was essentially the Babylonian one, “that the earth is a disk surrounded and bounded by the primeval ocean, with the dome of the heavens fixed above.” This is clearly stated in Isaiah 40:22:

There is One who dwells above the **circle of the earth**, And its inhabitants are like grasshoppers. He is **stretching out the heavens like a fine gauze, And he spreads them out like a tent to dwell in.**

Here, “the circle of the earth” describes something like a pizza pie, and the heavens are stretched over it like a tent. This earth sits in the middle of the primeval waters ‘below’ and ‘above’ the earth, as described in Genesis 1 and in 2 Peter 3:5: “long ago there were heavens and an earth standing firmly out of water and in the midst of water by the word of God.” See page 297 for pictures of the concept.

In view of the above information, it’s easy to see that the phrase “He stretches out the northern sky over empty space” is at best a metaphor, and no more represents a picture of physical reality than does the phrase “pillars of the earth”.

The final phrase of Job 26:7 is:

Suspending the earth upon nothing.

Once again, to a naive person who knows nothing of the overall Hebrew cultural and linguistic contexts, as described above, this sounds extremely suggestive of a remarkably modern and accurate picture of the earth floating in the vacuum of outer space. But as stated above by *The Cambridge Bible Commentary*:

The earth is usually portrayed as having its foundations fixed in the chaos water. This verse describes that act as ‘suspending earth’ in a formless void (cp. Gen. 1:2). There is no reason to believe that the author of Job espoused a modern cosmology which viewed the earth as floating in space (cp. verse 11 and 38:4-7).

Most Bible translations translate the Hebrew word *beliy-mah* (Strong’s 1099; literally “not any thing”, “nothing whatsoever”) as “nothing”. A good description of this word (and the only one I can find in Watch Tower literature) is from *What Is the Purpose of Life? How Can You Find It?* (1993), pp. 11-12:

9 How the earth is held in space. In ancient times when the Bible was being written, there was much speculation about how the earth was held in space. Some believed that the earth was supported by four elephants standing on

a big sea turtle. Aristotle, a Greek philosopher and scientist of the fourth century B.C.E., taught that the earth could never hang in empty space. Instead, he taught that the heavenly bodies were fixed to the surface of solid, transparent spheres, with each sphere nested within another sphere. Supposedly the earth was on the innermost sphere, and the outermost sphere held the stars.

10 Yet, rather than reflect the fanciful, unscientific views existing at the time of its writing, the Bible simply stated (in about the year 1473 B.C.E.): “[God is] hanging the earth upon nothing.” (Job 26:7) In the original Hebrew, the word for “nothing” used here means “not any thing,” and this is the only time it occurs in the Bible. The picture it presents of an earth surrounded by empty space is recognized by scholars as a remarkable vision for its time. *The Theological Wordbook of the Old Testament* says: “Job 26:7 strikingly pictures the then-known world as suspended in space, thereby anticipating future scientific discovery.”

Of course, the last two sentences ignore most of the above considerations, and are merely the opinions of the writers. One should also note that *The Theological Wordbook of the Old Testament* is published by an Evangelical, Fundamentalist organization.

The Interpreter’s Bible gives another take on this, in line with the information quoted above:⁶⁶⁴

He stretcheth out the north over the void... and hangeth the earth upon nothing (cf. the parallelism between void and nothingness in Isa. 40:17, 23). This amounts to a poetic description of creatio ex nihilo. The northern regions of the earth are connected in a special way with the sojourn of the gods... Possibly the north designates here the Stella Polaris on which the constellations appear to circumambulate. Although the poet’s cosmogony is geocentric, he fully understands that the earth rests upon nothing and receives its stability only from the will of the almighty Creator.

So this reference describes Job 26:7 as saying that God’s power—not any *thing*—is what ‘suspends’ the earth (whatever shape one thinks of it as having) in the nothingness, or void, of the “primeval waters” that still surround the earth, per 2 Peter 3:5.

Once again, nothing whatsoever justifies the claim that Job 26:7 describes a spherical earth suspended somehow in outer space. That claim is a product of bias-confirmation—eisegesis—reading far more into a Bible passage than the text or context justifies, based mainly on prejudices.

⁶⁶⁴ *The Interpreter’s Bible*, Vol. 3, 1956, p. 1094.

Bad Arguments With Respect To Evolution

Most of the Society's arguments against evolution have been borrowed or plagiarized from creationist sources, especially from Young-Earth Creationists. About the only YEC argument not used has been that Genesis' creative days were 24 literal hours long. Beginning in the mid-1980s, the Society explicitly rejected young-earth creationism,⁶⁶⁵ but continued to use many of its arguments, such as the idea of a vapor canopy (see page 11).⁶⁶⁶ When other creationists began to make themselves heard in the 1990s, many of whom were old-earth creationists and/or theistic evolutionists, the Society began using their arguments and quoted many of them as source references.⁶⁶⁷ But as many have observed, most of their arguments are just recycled from young-earth creationism.⁶⁶⁸ Many of these people were associated with what became the so-called Intelligent Design community, which included many members of what is now called the Discovery Institute of Seattle, Washington. Of late, Watch Tower writers seem to be using these creationists as references less and less, perhaps because ID was roundly declared a religious teaching rather than science in the 2005 Dover, Pennsylvania court case,⁶⁶⁹ and today is all but extinct.

The Society's usual technique of arguing against evolution is to begin with a dishonest conflation of evolution and abiogenesis (see page 83), then engage in *The Argument From Personal Incredulity* (see page 83) by listing a number of "How Wonderful This Bit of Creation Is!" narratives, invoking arguments and quotations from popular creationist sources along the way, often failing to give source references and almost never informing the reader that the material is from creationist sources. The material below gives examples of these dishonest techniques.

Theistic Evolution—The Society's Dishonest Arguments

The majority of Christians today accept both creation and evolution in some form of "theistic evolution". This means that God used evolution of some sort, or even direct creation of each "kind" of living thing, to create life on earth in a way that mimics fully naturalistic evolution, i.e., evolution by mutation and natural selection without input from any gods. Theistic evolution is therefore creation by another name, and there is no logical reason—aside perhaps from stubborn tradition—why Watch Tower writers would reject it, especially when they have already rejected young-earth creationism.

Note how an *Awake!* article rejects theistic evolution without giving any actual arguments:⁶⁷⁰

Did God use evolution to create life on earth?

"God said: 'Let the earth bring forth living creatures according to their kinds.'"—Genesis 1:24.

WHAT THE BIBLE SAYS God did not make life in a simple form and allow it to evolve into more complex forms. Instead, he created basic "kinds" of complex plants and animals, which then reproduced "according to their kinds." (Genesis 1:11, 21, 24) This process, which continues today, has resulted in the earth being filled with the same "kinds" of life that God originally created.—Psalm 89:11.

The Bible does not specify how much variation can occur within a kind, as might result when animals within a kind interbreed and adapt to their environment. While some view such adaptations as a form of evolution, no

⁶⁶⁵ *Awake!*, March 8, March 22, 1983.

⁶⁶⁶ cf. *Awake!*, March, 2014, p. 6; *The Watchtower*, March 15, 2011, p. 26; January 1, 2004, p. 30; August 15, 1988, p. 31; *Creator*, 1998, p. 95; *The Bible-God's Word or Man's?*, 1989, p. 110; *Creation*, 1985, p. 28.

⁶⁶⁷ cf. *Awake!*, May 8, 1997, p. 5.

⁶⁶⁸ cf. <https://physicstoday.scitation.org/doi/10.1063/1.1496376> : "Intelligent Design is creationism in a cheap tuxedo."

⁶⁶⁹ https://en.wikipedia.org/wiki/Kitzmiller_v._Dover_Area_School_District

⁶⁷⁰ *Awake!*, January, 2014, p. 13.

new kind of life is produced. Modern research supports the idea that the basic categories of plants and animals have changed little over vast periods of time.

Think about the quote from Genesis: “Let the earth bring forth ...” Does this in any way imply that God did not use gradual evolution to “bring forth”? No. Does it imply that God did not, over a long period of time, create individual living creatures, or “kinds” of creatures, again and again and again? No. The author must be aware that plenty of creationist authors allow for these possibilities.⁶⁷¹ Yet he pretends that “evolution” means exclusively the godless kind. But pretending is not argument, and so he does not even argue his case. What appears to be happening here is that the Writing Department has a longstanding tradition of allowing no footholds for that damnable “evolution”. In other words, they are biased against the word “evolution”.

But as anyone familiar with the fossil record knows, and as shown earlier in this paper, all manner of life forms have appeared continuously through time. And they’ve gone extinct all through time. That’s obvious from any description or chart of fossils through time.⁶⁷² It’s also obvious to anyone who has read non-creationist books on fossils. So for any Christian to speak truth about the fossil record, he is obligated to acknowledge that evolution in the general sense has occurred, the only question being about its cause—God or nature.

Note how another *Awake!* article rejects theistic evolution by using the Watch Tower’s dishonest conflation of evolution and abiogenesis, along with other bad arguments:⁶⁷³

DID GOD USE EVOLUTION?

Many who do not believe in the Bible embrace the theory that living things emerged from lifeless chemicals through unknown and mindless processes. Supposedly, at some point a bacteria-like, self-replicating organism arose, gradually branching out into all the species that exist today. This would imply that ultimately the mind-bogglingly complex human actually evolved from bacteria.

The theory of evolution is also embraced by many who claim to accept the Bible as the word of God. They believe that God produced the first burst of life on earth but then simply monitored, and perhaps steered, the process of evolution. That, however, is not what the Bible says.

- According to the Bible, Jehovah God created all the basic kinds of plant and animal life, as well as a perfect man and woman who were capable of self-awareness, love, wisdom, and justice.
- The kinds of animals and plants created by God have obviously undergone changes and have produced variations within the kinds. In many cases, the resulting life-forms are remarkably different from one another.
- The Bible account of creation does not conflict with the scientific observation that variations occur within a kind.

Here, “the theory of evolution” is explicitly claimed to include abiogenesis: the theory is “**also** embraced ...”

But the author is not even consistent with himself: falsely conflating evolution and abiogenesis—which he just described as “the theory that living things emerged from lifeless chemicals through unknown and mindless processes”⁶⁷⁴—he contradicts his description by saying that “the theory of evolution is also embraced by many who claim to accept the Bible as the word of God. They believe that God produced the first burst of life on earth but then simply monitored, and perhaps steered, the process of evolution.” If someone believes that “God produced the first burst of life” then he cannot

⁶⁷¹ cf. <https://biologos.org/common-questions/scientific-evidence/fossil-record>

⁶⁷² cf. <https://www.newscientist.com/article/dn17453-timeline-the-evolution-of-life/>

⁶⁷³ *Awake!*, March, 2014, p. 5.

⁶⁷⁴ Note the use of “theory” here in the colloquial sense rather than the scientific sense. Properly, abiogenesis is a hypothesis.

also believe that “living things emerged from lifeless chemicals through unknown and mindless processes”. Doesn’t this author even read his own stuff?

The observation that theistic evolution is creation by another name has been made by many Bible believers. For example, in the book *The Evidence of God in an Expanding Universe*, quoted by the 1963 *Awake!* discussed above (p. 84), zoologist author Edward Kessel wrote in support of the existence of the Christian creator-God (pp. 52-53):

To study science with an open mind will bring one to the necessity of a First Cause, whom we shall call God... Just as an open-minded scientist must heed the evidence and recognize that there must be a God, the non-scientist must likewise heed the evidence and recognize that creational evolution was God’s method of creation, once He had produced the material of the universe and established its laws. Creational evolution is the only explanation which correlates all of the evidence which is provided for us in the Book of Nature. Exegesis in the form of scientific research yields proof of creational evolution from every one of the chapters of this book—that of Morphology, Physiology, Embryology, Biochemistry, Genetics, Paleontology, Systematics, Zoogeography, etc.

Natural selection is one of the chief mechanisms of evolution, just as evolution is a mechanism of creation. It is one of the great laws of Nature, and like all the other laws of science it acts only as a secondary cause because it too is a product of God’s creation. The species produced through natural selection are just as much created by God as if they had been manufactured by Him... mutations are not always random and that the mechanism of evolution is not dependent upon blind chance. We must recognize, therefore, that there is Intelligence behind its creation and in the establishment of its laws. We are forced to the conclusion that this mechanism of evolution was designed, and this demands an intelligent Designer.

Continuing with Watch Tower tradition, and rejecting the notion of a God-produced burst of life followed by God’s monitoring and/or steering the process of evolution, the March, 2014 *Awake!* author pretends to give an argument, claiming that “that, however, is not what the Bible says. According to the Bible, Jehovah God created all the basic kinds of plant and animal life.” As if sequential creation by God—sequences ubiquitously found in the fossil record that are indistinguishable from naturalistic evolution—is somehow not creation. But if God initiated the first burst of life, then he is the creator of life. And if God steered the process of evolution, then he is the creator of all life forms. And if God somehow built the inevitability of gradual evolution into the fabric of the universe, then he is still the creator of “all the basic kinds of plant and animal life”, and of mankind.

The former head of the Human Genome Project, and later Director of the U.S. National Institutes of Health, Francis Collins, is an Evangelical Christian who argues in favor of theistic evolution in his book *The Language of God*.⁶⁷⁵ In 2007 he founded the BioLogos Foundation,⁶⁷⁶ which says of itself: “BioLogos invites the church and the world to see the harmony between science and biblical faith as we present an evolutionary understanding of God’s creation.” They list two of their core commitments as:

- We embrace the historical **Christian faith**, upholding the authority and inspiration of the Bible.
- We affirm **evolutionary creation**, recognizing God as Creator of all life over billions of years.

If a Christian and a scientist of such standing can argue in favor of theistic evolution, how must one view the arguments of people like Watch Tower writers, who are uneducated in the sciences and theology, and whose “theology” is little more than Watch Tower tradition? I suggest that these writers begin their education by reading Collins’ book. The book is, by the way, an excellent resource for a layman beginning to understand evolution.

⁶⁷⁵ Francis S. Collins, *The Language of God: A Scientist Presents Evidence for Belief*, 2006.

⁶⁷⁶ <https://biologos.org/>

So what is this Watch Tower author’s problem? Is he really so stupid that he cannot understand these things? Is he so ignorant that he has not read all about these things in secular and religious literature? No, he is not. Rather he, like most Watch Tower Writers, is hewing to a policy and tradition of refusing to yield a millimeter to scientists—hardly a way to generate rational, objective, valid arguments, but an excellent way to generate inaccurate, really bad arguments that play well with a thoroughly ignorant audience.

The *Awake!* author next acknowledges that “the kinds of animals and plants created by God have obviously undergone changes and have produced variations within the kinds. In many cases, the resulting life-forms are remarkably different from one another.” But that change and variation are the essentials of evolutionary change!⁶⁷⁷ Furthermore, the fossil record is clear that such change has occurred over at least the past 600 million years.

So the author acknowledges that evolutionary change occurs, but limits it to change “within the kinds”. On what basis? Not on the basis of evidence, since he gives no evidence at all that the change “within kinds” that he allows for are limited—he simply declares it. Similarly, most Watch Tower literature argues that the variation in “kinds” is limited by unspecified means, and implies that the variation of “kinds” after Noah’s Flood is virtually unlimited. Although scientists today count millions of species of animals, the Flood was survived by “a limited number of each kind of animal life”.⁶⁷⁸ More specifically:

Noah was instructed to preserve only representatives of every “kind” of land animal and flying creature. Some investigators have said that just 43 “kinds” of mammals, 74 “kinds” of birds, and 10 “kinds” of reptiles could have produced the great variety of species of these creatures that are known today.

This is argued in order to minimize the number of animals that had to be accommodated on Noah’s ark. Other Watch Tower literature has allowed that perhaps a few more “kinds” than listed above were on the ark. But the number of land dwelling species that exist today is estimated to be in the millions, even approaching ten million by some estimates—some 350-400,000 species of beetles alone have been estimated to exist^{679 680}—and tens of thousands of genera have been identified.

The above quote from *Awake!* mentions that “some investigators have said ...”. That kind of statement, unaccompanied by references, should be a red flag to any critical reader. And for good reason—the quote is from a 200-year-old Bible commentary.

It turns out that the original mention in Watch Tower literature of the figures “43 ‘kinds’ of mammals”, etc., comes from a 1951 *Awake!* magazine.⁶⁸¹ The article got these figures from *Clarke’s Commentary*, which was published from 1810-1826. Why the authors of *Awake!* articles from 1951 and 2014 would refer to a commentary from “Christendom” from 1810 is clear: modern commentators, aside from young-earth creationist “flood geologists”, have no truck with such claims. The author of the 2014 *Awake!* article obviously understands this problem, since he avoids referencing *Clarke’s Commentary*. Here is what the 1951 *Awake!* article said:

⁶⁷⁷ <https://en.wikipedia.org/wiki/Evolution> “Evolution is change in the heritable characteristics of biological populations over successive generations.” There is no scientific evidence that the amount of change over long periods of time has a limit.

⁶⁷⁸ *Insight*, Vol. 1, p. 327.

⁶⁷⁹ <https://en.wikipedia.org/wiki/Beetle>

⁶⁸⁰ Geneticist J. B. S. Haldane is said to have remarked to various audiences who inquired if there was anything that could be concluded about the Creator from the study of creation, “The Creator, if He exists, has an inordinate fondness for beetles.” https://en.wikiquote.org/wiki/J._B._S._Haldane

⁶⁸¹ *Awake!*, December 22, 1951, pp. 15-16.

Clarke's Commentary makes certain interesting observations. Of the six divisions of animal life it assigns, this source eliminates fish, worms and insects as not concerned in the ark calculations. This leaves mammalia, aves and amphibia. Though the *Commentary* gives the entire naturalist breakdown of each group, it emphasizes that undoubtedly only the basic genera or kinds would be of concern. With interest we note that they assign only forty-three genera to the mammalia division (excepting the whale kind, certainly of no concern here), seventy-four to the second class, birds not including web-footed fowls), and ten to the third class, amphibia (reptiles and serpents).

There are many obvious problems with these claims. Land-dwelling worms breathe air and usually drown in water. The same goes for insects, spiders, scorpions and the millions of species in the Class of land-dwelling Arthropods, as well as other "kinds" of animals. Fish come in two varieties: freshwater and saltwater; in general the one variety cannot survive in the other type of water. So Noah would have had to take on board every "kind" of worm, beetle, insect, spider, scorpion, etc., and God would have had to miraculously change the physical characteristics of saltwater or freshwater fish for the year of the Flood, and then change them back. The problem is nicely shown in comedian Bill Cosby's 1960s Noah skit. God and Noah are talking back and forth.⁶⁸²

God: Noah! Noah: I knew it. What do you want now? God: You're going to have to take one of those hippos off and get another one. Noah: Why? God: 'Cause you got two males. You need a female. Noah: I'm too tired to bring anything else on board. You change one of them! God: Come on, you know I don't work like that.

Now let's see what *Clarke's Commentary* said when discussing the capacity of Noah's ark:⁶⁸³

At the first view the number of animals may appear so immense that no space but the forest could be thought sufficient to contain them. If, however, we come to a calculation, the number of the different genera or kinds of animals will be found much less than is generally imagined. It is a question whether in this account any but the different genera of animals necessary to be brought into the ark should be included. Naturalists have divided the whole system of zoology into Classes and Orders, containing genera and species. There are six classes thus denominated:

Mammalia; Aves; Amphibia; Pisces; Insectae; Vermes.

With the three last of these, viz., fishes, insects, and worms, the question can have little to do.

The first Class, Mammalia, or animals with teats, contains seven orders, and only forty-three genera if we except the seventh order, cete, i.e. all the whale kind, which certainly need not come into this account. The different species in this class amount, the cete excluded, to five hundred and forty-three.

The second Class, Aves, birds, contains six orders, and only seventy-four genera, if we exclude the third order, anseres, or web-footed fowls, all of which could very well live in the water. The different species in this class, the anseres excepted, amount to two thousand three hundred and seventy-two.

The third Class, Amphibia, contains only two orders, reptiles and serpents; these comprehend ten genera, and three hundred and sixty-six species, but of the reptiles many could live in the water, such as the tortoise, frog, etc. Of the former there are thirty-three species, of the latter seventeen, which excluded reduce the number to three hundred and sixteen.

In view of real science, this is laughable. Galapagos land tortoises living in the open sea for a year? Freshwater frogs and land-dwelling toads doing the same? Beetles and worms treading water for the better part of a year? Please!

This is the sort of garbage source reference Watch Tower authors often set forth as "spiritual food in due season from Jehovah". And again, the author of the 2014 article was well aware that his source reference was garbage, because he deliberately hid it.

⁶⁸² <https://www.icomedytv.com/content/bill-cosby-noah-transcript>

⁶⁸³ <https://www.studylight.org/commentaries/acc/genesis-6.html>

The Society was dishonest about its motive for rejecting “theistic evolution” in the *Awake!* article “Did God Use Evolution to Create Life?”⁶⁸⁴ Note how it dishonestly gave an incomplete definition of the range of beliefs held by theistic evolutionists:

Today, most prominent “Christian” religious groups seem willing to accept that God must have used evolution in some way to create life. Some teach that God preprogrammed the universe to develop in such a way that living things inevitably evolved from lifeless chemicals and eventually produced mankind. Those who subscribe to this teaching, known as theistic evolution, do not feel that God interfered with the process once it started. Others think that, in general, God allowed evolution to produce most families of plants and animals but occasionally stepped in to move the process along.

With that incomplete and dishonest definition in hand, the writer gave the real reason for the Society’s rejecting theistic evolution of all sorts:

If evolution were true, then the Bible’s account of the creation of the first man, Adam, would be, at best, a story meant to teach a moral lesson but not intended to be taken literally.

In other words, even theistic evolution cannot be true, because it would invalidate the Watch Tower’s tradition of a literal interpretation of many parts of the Bible. This tradition includes the notion that the Garden of Eden story took place 6,000 years ago.

This is an example of the “slippery slope” fallacy. The argument is extremely common among Fundamentalist apologists, and is a textbook example of that fallacy.⁶⁸⁵

If you accept that the story of Adam and Eve was figurative, then you will do the same for most of the Old Testament stories of similar literary styles. Once you are there, the New Testament and the story of Jesus does not make sense, which will lead you to believe that the resurrection of Jesus was a “spiritual” one. Once you accept that, you won’t be a Christian anymore; you will be a dirty atheist, then you will have no morals and start having sex with animals of a barnyard nature. So you better take the story of Adam and Eve literally, before the phrase, “that chicken looks delicious”, takes on a whole new meaning.

Of course, if an intellectually honest person found that the story of Adam and Eve were a myth, then he would be morally obligated to reject it, along with everything it implies.

On the other hand, a large number of Christians have no problem dealing with these issues—only biblical literalists do. And experience shows that, more often than not, such literalists really put far more stock in their own narrow interpretations of the Bible than in the Bible itself. But reconciling the Bible and scientific reality is not the goal of this paper.

Nevertheless, the Christian organization BioLogos made an attempt to rationalize the implications of the Adam and Eve story with science’s story of human evolution in the YouTube video “Hominids Lived Millions of Years Ago, but How Can We Tell?”:⁶⁸⁶

⁶⁸⁴ *Awake!*, September, 2006, pp. 9-10.

⁶⁸⁵ <https://www.logicallyfallacious.com/tools/lp/Bo/LogicalFallacies/162/Slippery-Slope>

⁶⁸⁶ <https://www.youtube.com/watch?v=tAnklVuKDE>

Evolution and Noah's Flood

Hyper-rapid Evolution After the Flood

As mentioned earlier, the Society implicitly teaches that extremely rapid and wide variation within “kinds” of animals occurred after Noah’s Flood. Scientists term such variation over time “evolution”, but Watch Tower writers dismiss “evolution” without any real attempt at justification. Why such cavalier dismissal?

The reason is obvious: the Society teaches that Noah’s Flood ended in 2369 BCE,⁶⁸⁷ so that all of this incredibly rapid variation must have occurred within the past 4,400 years. But it’s much worse than that, because the written and artistic records of ancient, “pre-Flood” civilizations refer to various species existing within their cultural purview. This means that, according to Watch Tower chronology, most or all of the variation of “kinds” after the Flood must have taken place within fifty to a few hundred years afterwards, as shown below.

According to the Watch Tower’s timeline, Abraham was born in 2018 BCE.⁶⁸⁸ According to Genesis chapters 12-16, when Abraham was not yet 86 years old, he traveled to Egypt and had dealings with the Pharaoh and other Egyptians ca. 1940 BCE⁶⁸⁹. If Egypt were a going concern not later than 2000 BCE, complete with all the trappings of a Pharaonic civilization, then it must have existed for hundreds of years by the time Abraham visited Pharaoh. The same is true of the civilizations and cities that Genesis chapters 12-16 also mentions: Canaanites, Perizzites, Elamites, Amorites, Chaldeans (Sumerians), Sodom and Gomorrah, etc., as well as other civilizations that existed in the region, such as the Phoenicians and their main city Tyre.

These considerations show that Egyptian civilization must have begun no later than roughly 2200 BCE. That leaves a maximum of only about 170 years between Noah’s Flood and the beginning of Egyptian civilization. It also means that the Tower of Babel incident must have occurred no later than 170 years after the Flood, since the Egyptian language is completely separate from the supposedly original Hebrew that the Society claims Noah and his immediate offspring spoke. But keep in mind that written historical records plus archaeology put the beginning of written Egyptian history and the Dynastic period at around 3100 BCE,⁶⁹⁰ and that archaeology shows that Egypt was occupied by earlier peoples for at least a million years before that.⁶⁹¹ A great deal of archaeological evidence (pottery, buildings, gravesites, etc.) shows that these predynastic civilizations—not merely groups of hunter-gatherers, but actual civilizations that left what are commonly known as archaeological remains such as living sites, tools, pottery, graves, etc.—had been in the region since at least 8000 BCE. Could some 6,000 years of archaeological history reasonably be compressed into less than 170 years?

Of course, there is plenty of evidence that people inhabited not only Egypt, but other regions in the Near East, as well as Asia, Africa, and Europe, long before pharaonic Egyptian civilization. Along with the impossibility of hyper-rapid evolution, this proves that no such event as Noah’s Flood occurred in 2370 BCE.

Let us now take a side excursion into human history.

⁶⁸⁷ cf. *The Watchtower*, August 1, 2013, p. 14.

⁶⁸⁸ *Insight*, Vol. 1, p. 28.

⁶⁸⁹ *Insight*, Vol. 1, p. 694.

⁶⁹⁰ [https://en.wikipedia.org/wiki/Early_Dynastic_Period_\(Egypt\)](https://en.wikipedia.org/wiki/Early_Dynastic_Period_(Egypt))

⁶⁹¹ https://en.wikipedia.org/wiki/Prehistoric_Egypt

Human Population Growth After the Flood

As discussed elsewhere, the Society has Noah's Flood ending in 2369 BCE, and the tower of Babel incident occurring between 2269 and 2030 BCE (see also page 330), but the time frame can be narrowed down even more. Genesis 11:10-16 indicates that Peleg, fifth in line from Noah, was born about 101 years after the Flood ended (counting up the "begats"), which the Society dates to 2269 BCE. The name Peleg means "division", as Genesis 10:25 says, "because in his lifetime the earth was divided". If Peleg's father Eber named him "Division", then it is highly likely that this division already existed when Peleg was born (the Watch Tower speculates that perhaps Peleg's name was prophetic, but this is pure special pleading). It follows that the Tower of Babel incident must have occurred no more than about 100 years after Noah's Flood, which is extremely unlikely on many accounts, but that is what a Jehovah's Witness is forced to believe.

Genesis says that Noah's grandson Nimrod became a mighty hunter "in opposition to Jehovah" and that Nimrod built the city in which the tower of Babel was constructed, which according to the above discussion must have been within about 100 years of the Flood. Given that it would have taken decades for Noah's grandson to grow up and become a "mighty hunter" of renown, we can assign of minimum of about 50 years for Nimrod to have become such a renowned hunter—which must have included hunting formidable animals like lions. So the absolute earliest that Nimrod could have become a famous hunter was about 2320 BCE. If the Tower of Babel were built about 100 years after Noah's Flood, the absolute latest that Nimrod could have become a famous hunter was about 2270 BCE.

Given these figures, we have a very narrow time slot possible for the evolution of a small number of founding species from Noah's ark into the thousands that exist today: the 100 years between 2369 and 2270 BCE. But that evolution is tens of thousands of times faster than the fossil record indicates that evolution actually occurs. This is a problem that the Watch Tower Society has steadfastly ignored.

Furthermore, there were many civilizations in existence when Abraham was born (2018 BCE), and they must have originated many decades earlier in order for cities to have been built. If the Tower of Babel were built around 2270 BCE, there were about 250 additional years for the civilizations mentioned above to originate and build cities and flourish. This is extremely unlikely, because there are plenty of archaeological indications that these civilizations were much older than that. Egyptian written records go back to about 3100 BCE, and non-written records go back much further. The Pyramids were built beginning about 2550 BCE, which implies a much older civilization. Are Watch Tower writers prepared to assign better dates to all this? I think not.

There is another intractable problem for the Watch Tower's post-Flood timeline: growth of the number of humans. If the number of humans existing at 100 years after the Flood, at the time of the Tower of Babel incident as argued above, were too small, there would not have been enough humans to build a city and the Tower of Babel and to make sense for God to confuse the languages. So the question arises: how many people could have sprung from Noah's three sons and their wives in 100 years? The figures given below are speculative but reasonable; readers are free to speculate on their own.

I wrote a computer program to simulate population growth after Noah's Flood. It allows the user to select a variety of parameters that model the rate of growth: minimum and maximum ages for women to give birth, average time between pregnancies, maximum human lifespan, probability of death at a given age, and other factors. With parameters at the outside edges of being reasonable, one can get for the population of males at 100 years anywhere from 300 to 85,000. The higher figure requires

parameters that skew the growth rate to an extremely high level, such as a minimum birth age of 12 years, and one birth per woman per year. Raising the latter figure to one birth every two years lowers the maximum population range from 85,000 to 1,200-3,000. Raising the minimum birth age range to 14-18 years lowers the population range to 900-1,500. Obviously, the population figures are quite sensitive to some of the parameters.

Choosing a relatively aggressive set of growth rate parameters, with minimum birth age 14-18 and one birth every year and a half produces a 100-year population range from 4,000 to 12,000.

But even a population figure as high as 12,000 hardly allows for all the events that Genesis claims for the immediate post-Flood period. By this simulation, about 66% of the people would have been under 16 years old—not capable of all the building and other things that supposedly happened. And for Nimrod to have become “a mighty hunter in opposition to Jehovah”, with all that that implies, is simply not credible. Given these things, the Tower of Babel story and the Watch Tower’s post-Flood timeline are not reasonable.

Various Christian apologists have recognized the above problems with the timeline for events shortly after the Flood and have come up with various attempts at solution. For example, one young-earth creationist website⁶⁹² argues that the Masoretic text of Genesis 11:10-24 should have 100 years added to most of the “begat” numbers (e.g. Arpachshad was 135, not 35, when he begat Shelah). This, plus other revisions based on the earliest Septuagint texts and others, result in Noah’s Flood being moved back in time by 650 years. Other apologists argue that the “begats” of Genesis have other problems, the result being that Adam and Eve might have been created up to 10,000 years ago, with the Flood getting moved back commensurately.

No matter what the “real” figures should be for the creation of Adam and for the Flood based on what the most generous apologists allow, the evolution of a relative handful of “kinds” of animals after the Flood into the millions of species extant today, in a few decades to a few thousand years, is impossibly rapid. This is emphasized by information in the pages that follow.

Archaeological Evidence for Humans Before 2370 BCE

In this section I will often use “BP” to designate “before present” or “years ago”, so that “3,100 BCE” becomes “5,100 BP”.

Cave Art

Cave paintings are among the best known ancient archaeological evidence. Here is a short list of some and what is depicted:

64,000 BP: red hand stencil, Maltravieso cave, Spain, by a Neanderthal⁶⁹³

44,000 BP: pig hunting, Maros-Pangkep karst of South Sulawesi, Indonesia⁶⁹⁴

40,000 BP: bull, Lubang Jeriji Saléh caves, Borneo⁶⁹⁵

37,000-28,000 BP: lion, horse, cave bear, hyena, leopard, wolf, woolly rhinoceros, bison, deer, aurochs, mammoth, Chauvet Cave, France⁶⁹⁶

⁶⁹² <https://www.youtube.com/watch?v=V11yRTC6kGE>

⁶⁹³ https://en.wikipedia.org/wiki/Cave_of_Maltravieso

⁶⁹⁴ https://en.wikipedia.org/wiki/Caves_in_the_Maros-Pangkep_karst

⁶⁹⁵ https://en.wikipedia.org/wiki/Lubang_Jeriji_Sal%C3%A9h

⁶⁹⁶ https://en.wikipedia.org/wiki/Chauvet_Cave

35,000 BP: babirusa, Leang Timpuseng cave, Sulawesi, Indonesia⁶⁹⁷

28,000 BP: fish, wallaby, crocodile, people, Nawarla Gabarnmung, Arnhem Land, Northern Territory, Australia⁶⁹⁸

17,000 BP: aurochs, horse, deer, Irish elk, ibex, bison, lion, birds, bear, rhinoceros, Lascaux Cave, France⁶⁹⁹

13,000-9,000 BP: hand stencils, Cueva de las Manos, Argentina⁷⁰⁰

10,000-5000 BP: various animals and people, 700 sites collectively called “Rock art of the Iberian Mediterranean Basin”, eastern Spain⁷⁰¹

According to Watch Tower teaching, all of this cave art should be no more than 4,400 to 6,000 years old. Irrespective of dating methods, the fact that various extinct animals are depicted—animals that the Society teaches died out in Noah’s Flood—shows that much of this art must be “pre-Flood”. But the fact that most of the caves occur in ancient mountain ranges, and must have taken hundreds of thousands or millions of years to form in the rock by water percolating through the limestone, or by other slow processes, shows that the caves are far older than any possible date for Noah’s Flood. Once again we see Watch Tower teaching contradicted by scientific facts.

When the Sahara Desert Was Green

During the last glacial period the Sahara region was a desert like today, but larger. Climate changes that occur more or less regularly as part of the overall glacial cycles resulted in gradual melting of the continental glaciers in North America and Eurasia. These changes occur in synchrony with the earth’s orbital cycles and the variations in its axial tilt, so they have been going on for a very long time. Paleoclimatologists have found that this “green Sahara” has been alternating with extreme desert conditions for at least ten million years.

About 15,000 BP, rainfall began to increase throughout the Sahara and at about the same latitude around the world. During this African Humid Period the Sahara became largely green,⁷⁰² with savannah in the north and woodland in the south. During this time sea level rose to its present level (see page 323). Rivers and lakes appeared, with Lake Chad reaching about 10 times the area it has today. Hippos, crocodiles, and other water-loving creatures appeared in many places. People migrated into the region and left a variety of archaeological remains such as living sites, tools, and carvings of humans and animals on rock faces.⁷⁰³ They hunted and fished, and tended domesticated sheep, goats, and cattle. During about 6,000-5,000 BP the region dried up again, forcing the inhabitants to leave and migrate to wetter regions. Some of these emigrants seem to have been the ancestors of the earliest Egyptian civilization.

Watch Tower teaching ignores all of this, because there is no way to fit all the events and archaeological evidence into its historical scheme between 6,000 BP and 4,400 BP. If Noah’s Flood ended in 2369 BCE, the Sahara must have been green immediately afterward, and become populated by all manner of animals as well as humans. Would that have been before or after the confusion of languages at Babel?

⁶⁹⁷ <http://www.visual-arts-cork.com/prehistoric/sulawesi-cave-art.htm>

⁶⁹⁸ <https://en.wikipedia.org/wiki/Gabarnmung>

⁶⁹⁹ <https://en.wikipedia.org/wiki/Lascaux>

⁷⁰⁰ https://en.wikipedia.org/wiki/Cueva_de_las_Manos

⁷⁰¹ https://en.wikipedia.org/wiki/Rock_art_of_the_Iberian_Mediterranean_Basin

⁷⁰² https://en.wikipedia.org/wiki/African_humid_period

<https://www.sciencedirect.com/science/article/pii/S2590332220301007>

⁷⁰³ Cave of Swimmers, Libya: https://en.wikipedia.org/wiki/Cave_of_Swimmers

Archaeological Sites

Thousands of archaeological sites have been dated to before 2370 BCE. Here we will examine a few from Europe, the Near East, and the Americas. A good overview is found in the book *After the Ice: A Global Human History 20,000-5000 BC*.⁷⁰⁴

The site information listed below must be understood in the context of climate change. The Last Glacial Maximum occurred about 21,000 BP and climate gradually warmed after that. About 12,900 BP the Younger Dryas⁷⁰⁵ climate catastrophe began, which lowered northern hemisphere temperature some 4°C-10°C in a decade or two and marked a return to glacial conditions. Extreme aridity returned to many parts of the northern hemisphere and strongly affected animal and human populations. It lasted until about 11,700 BP.

Mammoth-Bone Dwellings

Remarkable mammoth-bone dwellings have been found in Russia, Ukraine, Poland, the Czech Republic, and Moravia.⁷⁰⁶ Ages range from about 25,000 to 14,000 BP. The bones include skulls, jawbones, leg bones, and tusks. Some of the bones show evidence of scavenging by predators. Archaeologists seem to agree that most of the bones were taken from natural accumulations of bones such as at the mouths of streams or in gullies. Often the remains of the dwellings contain hearths and other evidence of cooking. Sometimes they contain vegetable remains. A particularly well preserved hut dating to 15,000 BP comes from Mezhirich in Ukraine.⁷⁰⁷ Here are reconstructions:



Kebaran Culture

The Kebarans⁷⁰⁸ occupied parts of the Levant⁷⁰⁹ and Sinai from about 18,000 to 12,500 BP. They were nomadic hunter-gatherers who used microlithic tools,⁷¹⁰ and prepared wild cereals with grinding tools.

⁷⁰⁴ Steven Mithen, *After the Ice: A Global Human History 20,000-5000 BC*, 2003.

⁷⁰⁵ https://en.wikipedia.org/wiki/Younger_Dryas

⁷⁰⁶ <https://www.historyofinformation.com/detail.php?id=3449>

⁷⁰⁷ <https://www.donsmaps.com/mammothcamp.html>

⁷⁰⁸ https://en.wikipedia.org/wiki/Kebaran_culture

⁷⁰⁹ <https://en.wikipedia.org/wiki/Levant>

⁷¹⁰ <https://en.wikipedia.org/wiki/Microlith>

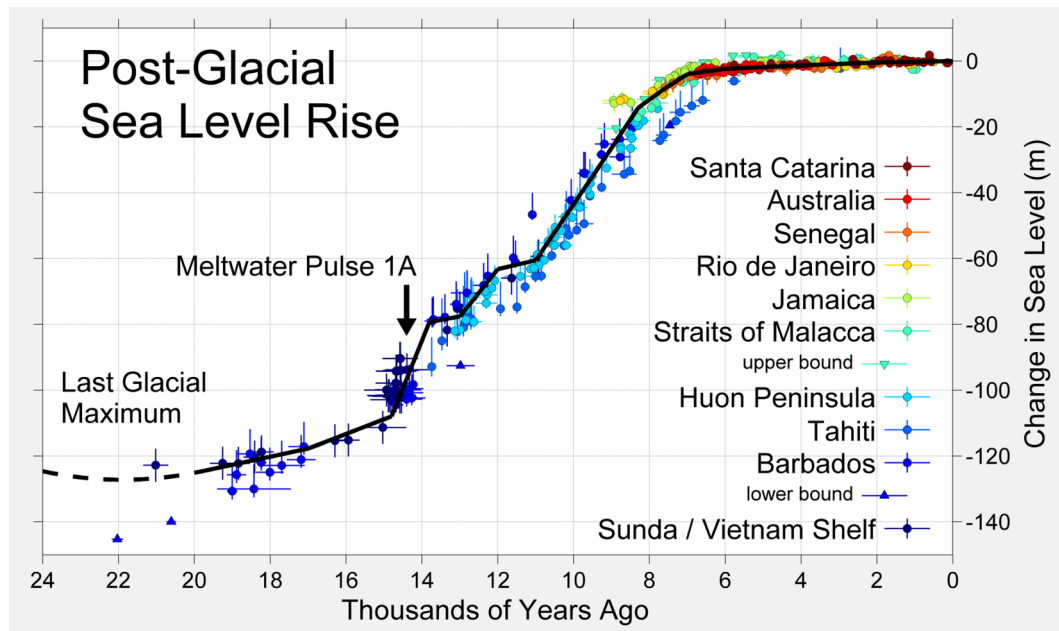
Natufian Culture

The Natufians⁷¹¹ occupied the Levant from about 15,000 to 11,500 years ago, and were probably the earliest sedentary people in the region. They pre-dated regular agriculture and founded a settlement where Jericho in Palestine is today. They hunted gazelle. Possible cultivation of cereals, earliest bread-making, beer-making.

Archaeological Sites and Sea Level Rise

One of the most important things to understand about ancient archaeological sites is how sea level has fluctuated during recent human history, and how this has affected people. This is especially so for the past 20,000 years, since this is the period in which human civilization has developed and people have been prone to occupy coastal regions.

Here is a graph that shows sea level during the past 24,000 years.⁷¹²



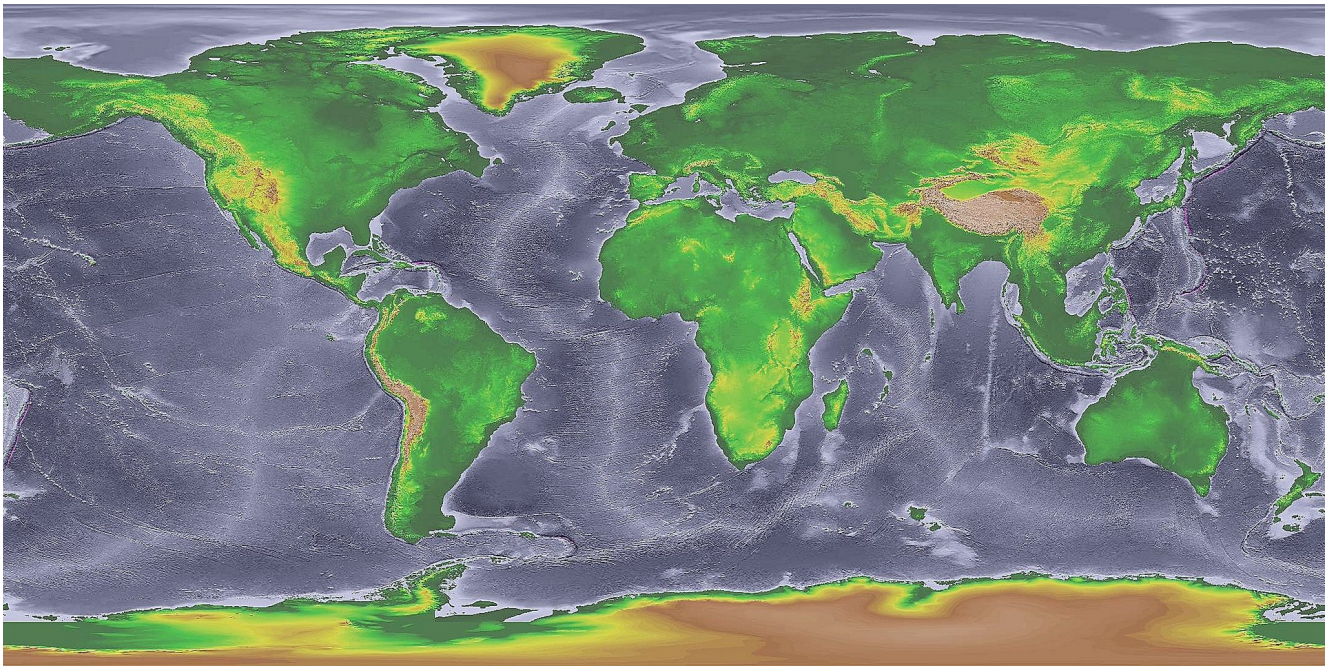
The graph shows that between the Last Glacial Maximum at 21,000 BP and 6,000 BP, sea level rose some 130 meters (425 feet) because the continental glaciers that had covered much of North America, Scandinavia, and Siberia melted. During that time, the United Kingdom was separated from continental Europe and became the British islands we see today. Between the U.K. and Europe existed “Doggerland”⁷¹³ which was inhabited by all manner of animals and humans. Today fishermen sometimes pull up mammoth bones from the bottom of the North Sea. From Malaysia to Borneo Southeast Asia was more or less one big continental area, as were Australia and New Guinea.⁷¹⁴ See the map below.

⁷¹¹ https://en.wikipedia.org/wiki/Natufian_culture

⁷¹² https://en.wikipedia.org/wiki/Past_sea_level

⁷¹³ <https://en.wikipedia.org/wiki/Doggerland>

⁷¹⁴ https://en.wikipedia.org/wiki/Sunda_Shelf



Named Human Occupation Sites in the Near East

Thousands of human occupation sites have been found that date to long before 6,000 BP. Here are a few:

In the Paleolithic Period⁷¹⁵

Ohalo II:⁷¹⁶ At the shore of the Sea of Galilee in Israel, usually underwater today. About 23,000 BP. Wikipedia states:

The site is significant for two findings which are the world's oldest: the earliest brushwood dwellings and evidence for the earliest small-scale plant cultivation, some 11,000 years before the onset of agriculture... In addition to the huts, the site also contains a grave and an area that was probably used as a refuse dump. The site is littered with a treasure trove of artifacts, including flints, animal bones, and remnants of fruit and cereal grains. Hundreds of species of birds, fish, fruits, vegetables, cereal grains, and large animals have been identified at the site. These finds have greatly expanded knowledge of Upper Paleolithic hunting and gathering practices.

'Ain Mallaha:⁷¹⁷ About 25 km. north of the Sea of Galilee, Israel. Natufian settlement ca. 12,500-10,000 BP. Inhabitants built 50 stone structures with subterranean floors. Sedentary hunter-gatherers who harvested wild grains. Hunted gazelle, deer, wild boar, etc; caught fish. No evidence of domesticated animals or cultivation of grains. Dead were buried in the floors of homes. Earliest known puppy burial.

Tell Abu Hureyra:⁷¹⁸ A settlement mound (tell⁷¹⁹) which is the site of two villages in the Euphrates valley in northern Syria, Abu Hureyra I and Abu Hureyra II, between about 13,000 and 9,000 BP. The

⁷¹⁵ <https://en.wikipedia.org/wiki/Paleolithic>

⁷¹⁶ https://en.wikipedia.org/wiki/Ohalo_II

⁷¹⁷ https://en.wikipedia.org/wiki/%27Ain_Mallaha

⁷¹⁸ https://en.wikipedia.org/wiki/Tell_Abu_Hureyra

⁷¹⁹ [https://en.wikipedia.org/wiki/Tell_\(archaeology\)](https://en.wikipedia.org/wiki/Tell_(archaeology))

first was inhabited by sedentary hunter-gatherers, the second by farmers who seem to have cultivated rye, making them the earliest systematic farmers.

Mureybet:⁷²⁰ A tell on the Euphrates River in northern Syria. Inhabited between 12,200 and 10,000 BP. First occupied by hunter-gatherers, then people who cultivated wild grains and had domesticated animals.

Hallan Çemi Tepesi:⁷²¹ Settlement site in Anatolia in Turkey. Founded ca. 11,500 BP. Flint and obsidian tools, stone bowls. Sandstone blocks used in structures. Basically hunter-gatherers, but people kept pigs. Consumed a variety of wild animals, lentils, almonds, pistachios.

In the Neolithic Period:⁷²²

This period began ca. 12,000 BP as the Younger Dryas ended. Ended ca. 6,500 BP as the Bronze Age gradually began.

Jericho:⁷²³ City on the West Bank of the Jordan River in Israel/Palestine. Together with the nearby Tell es-Sultan, first occupied ca. 11,600 BP. Among the oldest cities in the world. The tell contains the remains of as many as 20 successive settlements. Earliest inhabitants were hunter-gatherers who resided there seasonally. As the Younger Dryas ended, and climate warmed and became wetter, agriculture developed and people stayed there year round. Earliest dwellings built of sun dried clay/straw bricks held together with mud mortar.

Watch Tower publications, of course, have nothing to say about how long Jericho has been inhabited.

Jerf el Ahmar:⁷²⁴ Site in northern Syria occupied between ca. 11,600-10,500 BP. Now under the water of the Tishrin Dam.

Göbekli Tepe:⁷²⁵ Archaeological site in Anatolia, Turkey. Possibly not a place of dwelling, but a ritual center of unknown purpose. Used ca. 11,000-10,000 BP. Contains many massive stone pillars of local bedrock as much as 3 meters tall that contain pictograms and carvings of animals of unknown purpose. Contemporary with nearby settlements such as Nevalı Çori⁷²⁶ and Çayönü.⁷²⁷

Beidha:⁷²⁸ Small archaeological site near Petra in Jordan. Occupied sporadically from ca. 13,000 BP through 8,500 BP.

Ain Ghazal:⁷²⁹ Archaeological site in Amman, Jordan. Occupied mainly between ca. 10,300-7,000 BP. Many ceramic figurines of people and animals.

Çatalhöyük:⁷³⁰ Large settlement in Anatolia, Turkey. Occupied ca. 9,100-7,700 BP. Houses of mud brick. Many murals and stone figurines, mainly of women. Agriculture and domestic animals.

⁷²⁰ <https://en.wikipedia.org/wiki/Mureybet>

⁷²¹ https://en.wikipedia.org/wiki/Hallan_%C3%87emi_Tepesi

⁷²² <https://en.wikipedia.org/wiki/Neolithic>

⁷²³ <https://en.wikipedia.org/wiki/Jericho>

⁷²⁴ <https://archive.archaeology.org/0011/abstracts/farmers.html>

⁷²⁵ https://en.wikipedia.org/wiki/G%C3%B6bekli_Tepe

⁷²⁶ https://en.wikipedia.org/wiki/Neval%C4%B1_%C3%87ori

⁷²⁷ <https://en.wikipedia.org/wiki/%C3%87ay%C3%B6n%C3%BC>

⁷²⁸ [https://en.wikipedia.org/wiki/Beidha_\(archaeological_site\)](https://en.wikipedia.org/wiki/Beidha_(archaeological_site))

⁷²⁹ https://en.wikipedia.org/wiki/%CA%BFAin_Ghazal

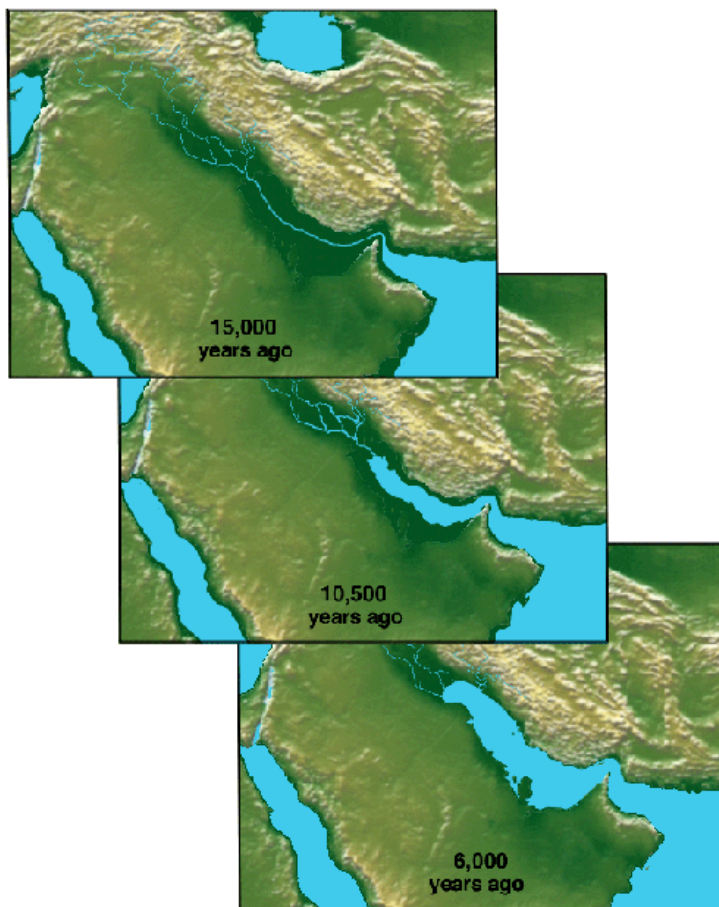
⁷³⁰ <https://en.wikipedia.org/wiki/%C3%87atalh%C3%B6y%C3%BCk>

Sea Level Rise In Southern Mesopotamia

As one of the earliest centers of civilization, the Mesopotamian region is important in human history. It is especially prominent for its role in “Bible history” as taught by the Watch Tower Society.

Consider the effects of extremely low sea level on the geography of Mesopotamia, in particular the region of today’s Persian Gulf. The Gulf is a shallow trough between continental regions. At the lowest sea level, the Tigris and Euphrates Rivers would have merged into one river that flowed through the valley to the Indian Ocean.⁷³¹ As sea level rose after 20,000 BP, the low area would have gradually flooded, producing more or less today’s topography including the Persian Gulf, as shown here.⁷³²

This low sea level, and the associated changes in geography, must have had a tremendous effect on the people living in the region—in particular, the occupation sites described above.



⁷³¹ http://emvc.geol.ucsb.edu/2_infopgs/IP2IceAge/ePersGulfFlood.html

⁷³² <https://www.sciencedirect.com/science/article/abs/pii/0012821X9600069>

By about 6,000 BP, the lower Mesopotamian region would have looked something like this.⁷³³

The Bible calls this region Shinar.



The map shows recent archaeological thinking on the Ubaid period (ca. 8500–5800 BP) that immediately preceded the Uruk period (ca. 6000-5100 BP).⁷³⁴ The footnoted reference says:

The Uruk period (ca. 4000 to 3100 BC; also known as Protoliterate period) existed from the protohistoric Chalcolithic to Early Bronze Age period in the history of Mesopotamia, after the Ubaid period and before the Jemdet Nasr period. Named after the Sumerian city of Uruk, this period saw the emergence of urban life in Mesopotamia and the Sumerian civilization. The late Uruk period (34th to 32nd centuries) saw the gradual emergence of the cuneiform script and corresponds to the Early Bronze Age; it has also been described as the “Protoliterate period”.

So according to the most recent archaeological thinking, the Ubaid period immediately preceded the invention of writing in the form of cuneiform script. This makes complete sense in terms of discoveries that the very earliest cuneiform script dates to about 5100 BP. The earliest cuneiform script comes from Sumeria in the form of clay tablets.⁷³⁵ The Sumerians occupied southern Mesopotamia as early as 6,000-7,000 years ago.⁷³⁶

Egyptian hieroglyphics first appeared at about the same time as Sumerian cuneiform tablets. Egypt’s supposed first king Narmer (or Menes?) lived about 5,000 years ago and is written about in the earliest records.⁷³⁷

⁷³³ https://en.wikipedia.org/wiki/Ubaid_period#/media/File:Map_Ubaid_culture-en.svg

⁷³⁴ https://en.wikipedia.org/wiki/Uruk_period

⁷³⁵ [https://en.wikipedia.org/wiki/Cuneiform#:~:text=Cuneiform%20is%20a%20logo%2Dsyllabic,cuneus\)%20which%20form%20its%20signs.](https://en.wikipedia.org/wiki/Cuneiform#:~:text=Cuneiform%20is%20a%20logo%2Dsyllabic,cuneus)%20which%20form%20its%20signs.)

⁷³⁶ <https://en.wikipedia.org/wiki/Sumer>

⁷³⁷ <https://www.youtube.com/watch?v=OasaMoGzMzY> Ancient Egypt Documentary - Complete History - 8000 B.C. to 30

So much for the Watch Tower Society's claim that evidence for writing dates back only to about 4,400 years ago.

The Bible says that Abraham came from the Sumerian city Ur, which originated in the Ubaid period⁷³⁸ about 5,800 BP.⁷³⁹ According to the above maps, Ur was on the coast of the Persian Gulf immediately after sea level stopped rising.

Above we examined a few human occupation sites as far back as 25,000 BP. The Kebarans and Natufians lived in Mesopotamia as far back as 18,000 BP. It is certain that other people lived in other parts of Mesopotamia at the same time—in particular, in the trough in what is now the bottom of the Persian Gulf along the merged Tigris/Euphrates River. Climate must have been fairly warm and wet in the river valley, leading to hospitable living conditions. Some have speculated that this period gave rise to the legend of Adam and Eve and the lost Garden of Eden: “a land of plenty, of eternal life and peace, had lodged firmly in the collective mind and in a specific geographical area.”⁷⁴⁰ This might also have given rise to the legend of Noah's Flood as memories of flooding of the valley during the rise of sea level between 15,000 and 7,000 years ago merged into one collective memory. Of course, flooding events in other areas might have given rise or contributed to the legend.

Above have been described two of the oldest civilizations, in Mesopotamia⁷⁴¹ and Egypt.⁷⁴² Others exist, such as China, India and in Mesoamerica; these are generally referred to as cradles of civilization.⁷⁴³

Cradles of Civilization

Here are some extremely brief bits of information.

Mesopotamia: Described above.

Egypt: Described above.

China:⁷⁴⁴ Human teeth: 125,000-80,000 BP. Stone tools of Levallois technology: 170,000-80,000 BP. Neolithic artifacts: 12,000 BP. Cultivated millet: 9,000 BP. Jiahu culture: 9,000 BP. Proto-writing: 9,000 BP. Pictographic cliff carvings in Ningxia: 8,000-7,000 BP. Cultivated rice: 8,000 BP. Yangshao culture: 7,000-5,000 BP. Longshan culture: 5,000-4,000 BP.

India:⁷⁴⁵ Earliest agriculture: 8500 BP. Indus Valley civilization: 5300 BP.

Mesoamerica:⁷⁴⁶ Earliest agriculture: 7000 BP. Pre-Olmecs 4500 BP. Olmecs: 3500 BP.

B.C.

<https://en.wikipedia.org/wiki/Narmer>

<https://www.youtube.com/watch?v=Wo6OO992ywI>

<https://www.youtube.com/watch?v=kh9ByB2jVU4>

⁷³⁸ https://en.wikipedia.org/wiki/Ubaid_period

⁷³⁹ <https://en.wikipedia.org/wiki/Ur>

⁷⁴⁰ cf. <http://ldolphin.org/eden/>

⁷⁴¹ <https://en.wikipedia.org/wiki/Mesopotamia>

⁷⁴² https://en.wikipedia.org/wiki/Ancient_Egypt

⁷⁴³ https://en.wikipedia.org/wiki/Cradle_of_civilization

⁷⁴⁴ https://en.wikipedia.org/wiki/History_of_China#Ancient_China

⁷⁴⁵ https://en.wikipedia.org/wiki/Indus_Valley_Civilisation

⁷⁴⁶ <https://en.wikipedia.org/wiki/Olmecs>

Other Pre-6,000 BP Archaeological Sites

The Americas

Hundreds of Paleo-Indian archaeological sites have been found. They contain all manner of evidence of human habitation: burials, campsites, tools, toolmaking sites, butchered animal bones, etc. While the dating of the earliest sites is controversial, many are securely dated to as far back as about 18,000 BP.

Footprints in Gypsum Sand from Ice Age New Mexico

The September 2021 issue of the journal *Science* reported⁷⁴⁷ that human footprints dated to between 23,000 and 21,000 years ago have been found in hardened gypsum sand and mud from the shore of dry Lake Otero in White Sands National Monument in New Mexico. Also found were the footprints of extinct megafauna such as mammoths, giant ground sloths, dire wolves, saber-toothed cats, camels and bison.

Clovis Culture

The famous “Clovis points”—distinctively styled stone spear points—come from this culture. These have been found all over North America. Other evidence of Clovis culture exists as far south as Venezuela. For many years archaeologists thought the Clovis people⁷⁴⁸ were the earliest inhabitants of North America, but recent discoveries of older sites show that, whoever the Clovis people were, they were not the earliest. Genetic studies, based on DNA from a burial in Montana, have shown that about 80% of modern native Americans have Clovis ancestors. The other 20% have unknown ancestry, but it all traces back to eastern Siberians.

Rimrock Draw Rockshelter

A living site in eastern Oregon occupied from 15,800 BP onward.⁷⁴⁹ A stone tool was found just under ash from an eruption of Mt. St. Helens dated to 15,800 BP. Stone projectile points were found in younger layers. Tooth fragments identified as from a camel that went extinct 13,000 years ago were found.

Paisley Caves

A complex of caves in southern Oregon that contained non-Clovis stone tools, bones of extinct camels and horses, and human coprolites (fossilized feces).⁷⁵⁰ The coprolites contained DNA that allowed dating to about 13,000-14,000 BP.

Kennewick Man

In 1996 nearly complete skeletal remains of a prehistoric man were found on the banks of the Columbia River in Kennewick, Washington.⁷⁵¹ Eventually the skeleton was dated to about 9,000 BP. DNA studies showed that he was related to modern Native Americans.

⁷⁴⁷ “Human footprints near ice age lake suggest surprisingly early arrival in the Americas”, *Science*, September 23 2021, Vol. 373, Issue 6562, p. 1426, Lizzie Wade.

<https://www.science.org/content/article/human-footprints-near-ice-age-lake-suggest-surprisingly-early-arrival-americas>

“Evidence of humans in North America during the Last Glacial Maximum”, *Science*, September 24 2021, Vol. 373, Issue 6562, pp. 1528-1531, Matthew R. Bennett, *et al.*

<https://www.science.org/doi/10.1126/science.abg7586>

⁷⁴⁸ https://en.wikipedia.org/wiki/Clovis_culture

⁷⁴⁹ <https://www.flickr.com/photos/blmoregon/16098243393>

⁷⁵⁰ <https://en.wikipedia.org/wiki/Coprolite>

⁷⁵¹ https://en.wikipedia.org/wiki/Kennewick_Man

Indian Sandals at Fort Rock Cave

A cave near the town of Fort Rock in central Oregon containing various signs of habitation as old as 13,000 BP.⁷⁵² Numerous sagebrush bark sandals found between 9,000 and 13,000 years old.

Indian Sandals at Crater Lake

Crater Lake in southeast Oregon was formed after the Cascades Mountains volcano now called Mount Mazama blew up 6,800-7,700 BP and collapsed into a volcanic caldera.⁷⁵³ Native Americans have lived in the area for more than 10,000 years. Sagebrush sandals were found buried in Mazama ash in a cave east of the mountain.

Of course, the Watch Tower Society has traditionally dismissed all archaeological ages greater than about 4,400 or 6,000 years by arguing that all dating methods applied to those periods are invalid, such as radiocarbon and tree-ring dating. But it has rarely used these arguments since 1990. Indeed, its comments since 1990 on such dating have generally been to praise the methods for their confirmation of various biblical historical events. I suspect that Watch Tower writers understand on some level that the good agreement among many different dating methods for certain historical facts is extremely good evidence that such dating is correct.

Back to Dating the Events After the Flood

On page 318 I began a side excursion from a demonstration that, according to Watch Tower chronology, Egyptian civilization must have begun no later than roughly 2200 BCE, leaving a maximum of only 170 years between Noah's Flood and the beginning of Egyptian civilization, and showing that the Tower of Babel incident must have occurred no later than 170 years after the Flood. The above archaeological evidence shows that Mesopotamian and Egyptian civilizations were going concerns for thousands of years before 2200 BCE, so Watch Tower chronology and teaching is wrong.

Actual archaeological sites show that people had been creating proto-villages in the Near East at least 25,000 years ago, and that farming had begun at least 10,000 years ago. Could some 6,000-21,000 years of archaeological history reasonably be compressed into less than 170 years? I think not, so let's continue.

Those "170 years" can be narrowed further. Consider the supposed confusion of languages at Babel (somewhere between 2269 and 2030 BCE, according to Watch Tower chronology⁷⁵⁴ but most likely close to 2269 (see page 319)). Then we have only about 70 years not only for all those civilizations to develop and go extinct, but for all the animal species known to those civilizations to have evolved from a handful of "kinds" preserved on Noah's ark. It's no wonder the Society will not discuss any of this: **too much happened too fast.**

Such rapid evolution flies in the face of common sense and of the known history of certain animals.

For example, small cats have been revered for at least 9,500 years. We know this because a cat was found buried alongside a Neolithic human in Cyprus dated to about 9,500 years ago.⁷⁵⁵ Cats were revered in Egypt at least back to the First Dynasty (ca. 3100 BCE)⁷⁵⁶ and were later mummified by the hundreds of thousands. The earliest known cat mummies were not of today's housecats, but of African

⁷⁵² https://en.wikipedia.org/wiki/Fort_Rock_Cave

⁷⁵³ https://en.wikipedia.org/wiki/Mount_Mazama

⁷⁵⁴ *Insight*, Vol. 1, p. 234; Genesis 10:21-25; 11:10-18.

⁷⁵⁵ https://en.wikipedia.org/wiki/History_of_cats

⁷⁵⁶ https://en.wikipedia.org/wiki/First_Dynasty_of_Egypt

wildcats and jungle cats⁷⁵⁷ from which domestic cats appear to have descended (although other Near Eastern wild species are possible). This last footnoted reference states that “a 2017 study confirmed that domestic cats are descendants of those first domesticated by farmers in the Near East around 9,000 years ago.”

And of course, both the historical and fossil records show that there are and have been far more cat types (“kinds”?) than the common housecat. Recent types: lion, tiger, jaguar, leopard, bobcat, lynx, cougar, serval, etc. Fossil types (not necessarily closely related to true cats): saber-tooths in many varieties going back 42 million years,⁷⁵⁸ many extinct cat varieties going back 25 million years, many true modern big cat varieties going back 4-6 million years.⁷⁵⁹ Did all these originate, live and go extinct in the 30-270 years between Babel and Abraham?

Consider the horse “kind”. Today there exist dozens of subspecies of the genus *Equus* in the basic varieties horses, zebras and asses. While all of these can crossbreed under the right conditions, usually the offspring are born dead, or are infertile or poorly fertile due to differences in the number of chromosomes. In the wild, these varieties do not cross at all, even when they live side by side. Clearly, these animals distinguish one variety from another and do not mate, so they are clearly different “kinds”. Paleontologists have determined that these modern varieties began to split from a common ancestor about 4 million years ago, and obviously they have evolved into today’s many partially interfertile breeds. The only real difference between the Society’s post-Flood narrative and the paleontologists’ narrative, then, is that the evolution occurred in a few hundred years as opposed to a few million years.

Creatures classed as horses are found in the fossil record as far back as 55 million years ago⁷⁶⁰ in dozens of species. Do Watch Tower writers have any actual evidence that these dozens of species did not gradually evolve into the varieties we observe today? If they claim that one basic “kind” of horse could evolve in a few hundred years into horses, zebras and asses, how can they reasonably claim that evolution over tens of millions of years cannot result in much greater variety?

If post-Flood hyper-rapid evolution occurred, why do we not see it today? When did it stop?

Other Problems with Hyper-Rapid Variation After the Flood

Cheetahs are extremely inbred, as shown by DNA studies and by the fact that experiments with skin grafts show that cheetahs are so closely related that they are virtually clones.⁷⁶¹ This appears to be the result of cheetahs almost dying out about 10,000 years ago at the end of the last ice age maximum, leaving only a tiny population that became the ancestor of all of today’s cheetahs. Furthermore, the American cheetahs all died out by 11,000 years ago. Why them and not the African cheetahs?

Obviously then, if most animals were down to two or fourteen specimens just 4,400 years ago, all of today’s animals would be just as inbred as cheetahs and most would be virtual clones of each other. It does no good to argue that perhaps God intervened to create the high genetic diversity we see in most animals today. Why leave out cheetahs? What is even the point of the Flood?

If Noah’s Flood were as severe as the Society has claimed (see page 89), there would be no ancient fossils, because all traces of pre-Flood geography would have been erased. That means that all fossils,

⁷⁵⁷ https://en.wikipedia.org/wiki/Cats_in_ancient_Egypt

⁷⁵⁸ https://en.wikipedia.org/wiki/Saber-toothed_cat

⁷⁵⁹ <https://news.nationalgeographic.com/news/2013/11/131112-big-cats-origin-tibet-animals-science/>

⁷⁶⁰ cf. https://en.wikipedia.org/wiki/Evolution_of_the_horse <https://www.amnh.org/exhibitions/horse/the-evolution-of-horses> <http://chem.tufts.edu/science/evolution/horseevolution.htm>

⁷⁶¹ “Noah’s Ark and the Cheetah”: <https://www.youtube.com/watch?v=rIIWKp44T50>

from the earliest Precambrian times through just 4,400 years ago, must have been laid down in just the last 4,400 years, with most of them put in place within some 200 years of Noah's Flood. Implausible? Of course. Possible? Not even close. The Society has rejected the "flood geology" of young-earth creationists as unscriptural and scientifically unbelievable, which claims that all fossils are post-Flood. Watch Tower tradition is clearly not self-consistent.

Invoking magic by God does not help. First, it's pure special pleading. Second, there is no evidence for it. Third, if God's actions required him to perform cleanup magic after the Flood, then why not do simpler magic and wipe out just the bad humans, rather than make all the fuss and mayhem of a global Flood?

Given these facts, and the Society's desire to appear rational to its JW audience by avoiding overtly stupid arguments like 'the Bible says the moon is made of cheddar cheese, so you should believe it', Watch Tower writers have no choice but to acknowledge that the fossil record really is as old as geologists have found. At least, they have to acknowledge this on some internal level, even though they have never acknowledged it in print.

More On How Many "Kinds" of Animals Exist

In order to make the number of created "kinds" on Noah's ark more plausible, the above-referenced Watch Tower material attempted to minimize the number of animal species needed on Noah's ark to repopulate the earth after Noah's Flood. Those attempts are laughable in the face of actual facts, as shown above. There are far more "kinds" of animals than the Society's discussions allow for. This makes it much more difficult for such a number to be accommodated on the ark, which is the point of trying to minimize the number. Worse, if the number of "kinds" were as small as the Society argues, then evolution must have occurred at a pace exceeding by a factor of ten thousand anything seen in the fossil record.

This evolution was not mere "variation within a kind", as the Society has argued, but full blown evolution of new "kinds", since many of today's "species within kinds" are either completely infertile with one another, or produce hybrids that are infertile. And many of these will not breed with one another even given the opportunity (think grizzly bears and black bears).

And of course, variation/evolution at this high rate should have left massive amounts of physical evidence that such changes occurred over the past 4,400 years, especially for the first few hundred years of that period. After all, the Bible itself, according to the Society's traditional view, describes in Psalm 104:5-8 massive geological upheavals: "mountains proceeded to ascend, valley plains proceeded to descend", which would have destroyed all fossil-bearing geological layers. But there is no such evidence, and the Society has never given any. Rather, its writers have retreated to giving vague generalities that sound good to the ignorant, but do not pass muster with anyone with a modicum of knowledge of science. In this, they follow the young-earth creationists.⁷⁶²

Watch Tower writers carefully avoid specifics with regard to everything related to the above issues, even while giving the impression to their ignorant readers that they have divinely directed knowledge of them. They avoid naming any "kinds" of animals except by the most general categories, such as "cat kind", "dog kind", etc. This avoids their having to deal with specific problems when someone points out inconsistencies in their claims.

Now let's look at the "post-Flood evolution" of some specific "kinds" of animals.

⁷⁶² cf. <https://www.youtube.com/watch?v=Dm277H3ot6Y>

Cat Kind

There are about 13 extant Genera comprising dozens of species of cats, and another 35 or so extinct Genera,⁷⁶³ including saber-tooth cats. If there were one cat “kind” on Noah’s ark, then it must have split rapidly into the various species found in the recent fossil and historical records, such as lions and domestic cats. As shown above (see page 318), it’s fairly easy to pin down the required time frame in Watch Tower chronology by using the Society’s own teachings: the 100 years between 2369 and 2270 BCE. But that is impossibly fast.

Furthermore, we know from cave paintings and the fossil record that lions and their close kin have existed for many tens of thousands of years (dated by radiocarbon and other methods; see page 231). The Chauvet Cave in France was occupied some 28,000-37,000 years ago⁷⁶⁴ and contains hundreds of paintings of Ice Age animals including cave lions, leopards and panthers. Some 80 specimens of the American Lion have been dug out of the La Brea Tar Pits in Los Angeles,⁷⁶⁵ along with tens of thousands of other animals comprising hundreds of mostly extinct species. These lions are as much as 50,000 years old but no younger than about 11,000 years. Hundreds of saber-tooth cats have been dug out of the Tar Pits along with thousands of extinct dire wolves. In 1979⁷⁶⁶ the carcass of an extinct Steppe Bison was dug out of permafrost in Alaska. It had been killed and partly eaten by lions about 36,000 years ago. This is known from claw marks and tooth punctures in the skin, as well as a piece of lion tooth embedded in the frozen meat of the neck. The generally accepted timeline for the appearance of various members of the cat family (Felidae) begins with a Felid ancestor about 11 million years ago,⁷⁶⁷ as indicated by both the fossil record and DNA studies.

The Society’s interpretation of the Flood account requires that all types of cats except for one “kind”—which the Society has never discussed—were destroyed in the Flood, leaving only one “kind” which magically evolved into lions within a few decades, housecats within a few more, and all other kinds within a few hundred years more. So the actual evidence—fossils and DNA—shows that the Society’s speculation requires an evolution of cats about 50,000 times faster than reality. The Society’s claim is beyond ridiculous.⁷⁶⁸ Are Watch Tower writers prepared to make arguments that are not outright ridiculous?

Frog Kind

Many people think that the frog is all of one “kind”, but that is far from the case. There are about 5,000 extant species of what I’ll call the frog “kind”,⁷⁶⁹ which actually includes toads and frogs (Order Anura), comprising some 33 Families and some 350 Genera. Most of these 5,000 species do not breed together, even when they live side by side, so even by creationist definitions most must be different “kinds” (I know of no studies examining how many frog types are capable of interbreeding and producing fertile offspring under laboratory conditions). For example, in the United States the “true frogs” (Family Ranidae) include various species of the common frog and the bullfrog; these do not

⁷⁶³ <https://en.wikipedia.org/wiki/Felidae>

⁷⁶⁴ https://en.wikipedia.org/wiki/Chauvet_Cave

⁷⁶⁵ http://library.sandiegozoo.org/factsheets/_extinct/lion_american/lion_american.htm

⁷⁶⁶ <https://www.uaf.edu/museum/press/spotlight/blue-babe/>

<https://www.alaska.edu/uajourney/history-and-trivia/blue-babe-a-messenger-fro/>

<https://www.ancient-origins.net/artifacts-other-artifacts/blue-babe-would-you-eat-36000-year-old-bison-meat-009862>

⁷⁶⁷ *Scientific American*, “The Evolution of Cats”, July 2007, pp. 68-75.

⁷⁶⁸ cf. <https://www.youtube.com/watch?v=pNrt90MJL08> “Foundations of Feliforme Families”

⁷⁶⁹ <https://en.wikipedia.org/wiki/Frog>

https://en.wikipedia.org/wiki/List_of_Anuran_families

breed with one another. The fact that some 5,000 species maintain separate identities around the world shows that most are not interfertile and so must be different “kinds”.

The frog “kind” has existed for at least 265 million years, according to the fossil record.⁷⁷⁰ Genetically, frogs are at least as different from one another as mammals are from one another, so they clearly comprise many “kinds”. The American bullfrog is a different “kind” from the African Cane toad.

While Watch Tower writers are too ignorant and cowardly to tackle such issues, some young-earth creationists jump right in. For example, today’s most popular YEC website, Answers in Genesis, contains an article that assigns 140 “kinds” to the frogs.⁷⁷¹ AIG argues that frogs most likely were on Noah’s ark because they “fit the biblical description of creeping things that breath air and have nostrils (*Genesis 7:14, 22*)”—contrary to *Clarke’s Commentary* cited above. Whether this assignment is correct or not, I am not competent to judge, but I suspect that by the standard of interfertility there are many more than 140 “kinds”. Of course, AIG discusses none of these unpleasant details.

Mammal “Super-Kind”

There are some 5,400 mammal species extant today (the exact number varies with the source reference), contained in about 1,200 genera, 150 families and 29 orders.⁷⁷² It is not likely that a biblical creationist would call an order a “kind” since orders contain quite varied types of animals that do not and can not interbreed. For example, the Rodent order contains more than 2,000 species of mice, rats, squirrels, prairie dogs, chipmunks, porcupines, beavers, guinea pigs, hamsters, gerbils, capybaras and many other types of gnawing animals. The Lagomorph order contains rabbits, hares, pikas and the like, some 87 species. The Bat order contains some 1,200 species in 20 families and 130 genera, most of which even die-hard creationists would be hard put to call the same “kind”. There are some 300 species of primates such as lemurs, monkeys, apes and humans, only a small fraction of which might be called the same “kind”. The order Cetartiodactyla (whales and even-toed ungulates; formerly cetaceans and artiodactyls) comprises some 90 ocean-dwelling whales and such, and some 220 land-dwelling species such as pigs, peccaries, hippopotamuses, camels, llamas, alpacas, mouse deer, deer, giraffes, antelopes, sheep, goats, and cattle. The Carnivora order contains dogs, cats, weasels, bears, seals, hyenas, raccoons, etc. in some 280 species. The Perissodactyl order, or odd-toed ungulates, of some 17 species, is comprised of horses, zebras, asses, rhinoceroses and tapirs. The Diprotodont order, of about 125 species of marsupials, includes kangaroos, wallabies, possums, koala, wombats, etc. The Didelphimorph order, or opossums, comprise about 103 species in 19 genera. The order Pilosa comprises anteaters and sloths. The order Proboscidea comprises elephants. For other orders, see <https://en.wikipedia.org/wiki/Mammal> .

Even a cursory look at the above online information shows that there are many hundreds of “kinds” of mammals, at the very least—far more than the 43 “kinds” of land-dwelling animals, including mammals, commonly cited in Watch Tower literature.

Bird Kind

There are some 10,000 species of birds in about 47 orders and 1,500 genera. At a minimum there are many hundreds to thousands of different “kinds” of birds by any reasonable measure. This is again far more than the 74 “kinds” commonly cited in Watch Tower literature.

⁷⁷⁰ <https://en.wikipedia.org/wiki/Frog>

⁷⁷¹ <https://answersingenesis.org/creation-science/baraminology/an-initial-estimate-toward-identifying-and-numbering-the-frog-kinds-on-the-ark-order-anura/>

⁷⁷² <https://en.wikipedia.org/wiki/Mammal>

Many more “kinds” might be listed, but the above should be sufficient to establish that a ridiculous level of “evolution” is required to produce the millions of today’s species from a few hundred “kinds” in just 4,400 years. I have no doubt that a few Watch Tower writers are aware of this; hence, their avoidance of the subject.

Rodent Kind

There are some 2,300 species, 34 families, and 480 genera of rodents.⁷⁷³ Most are herbivorous, some are omnivorous, and a few are predators.

The proposition that so many extremely diverse species could evolve in a mere few hundred or thousand years is fantasy.

Weasel Kind

Weasels or mustelids⁷⁷⁴ comprise 66-70 species and include not just small types such as common weasels, polecats, stoats or ermines, ferrets, and mink, but larger types such as martens, badgers, honey badgers, otters, and wolverines. Skunks and mongooses were once classed as mustelids but have now been assigned their own classes.

Once again it is evident that some 70 species as diverse as the mustelids cannot possibly have evolved from just one progenitor kind beginning 4,400 years ago.

Bat Kind

There are some 1,400 species of bats in two suborders and about 180 genera.⁷⁷⁵ They are the only flying mammal and are excellent fliers, more maneuverable than birds. Some eat insects, some fruit, some nectar, some vertebrates. A few violate the Mosaic Law and eat only blood. Most modern bats use echolocation, but fossils of early bats have been found that did not. Many plants are pollinated only by bats and could not reproduce without them. Certain species live very long lives for such small creatures, 40+ years in some cases. Their chromosomes, for yet-unknown reasons, are repaired in such a way as to remain intact far longer than those in other mammals.

As with other numerous and diverse “kinds”, an impossible rate of evolution would be required to produce so many different species in only a few hundred or thousand years.

Snake Kind

Some 3,900 species of snakes exist.⁷⁷⁶ Snakes are strictly carnivorous; all swallow their prey whole. Their skulls are extremely flexible, with bones attached to one another by highly elastic ligaments. This allows them to swallow prey as much as four times the diameter of their heads. There are three basic varieties classed by the way they eat: venomous, constrictors, and those that simply swallow their prey whole. Venom is essentially a modified saliva, consisting of a cocktail of hundreds of poisonous proteins. It is delivered through hollow fangs or grooves in specialized teeth. Venom can be a destroyer of muscles or nerves or both. Constrictors, such as pythons and anacondas, have many features that allow constriction. They coil their bodies around prey and squeeze it tight enough to cut off heart operation and blood flow.

⁷⁷³ <https://en.wikipedia.org/wiki/Rodent>

⁷⁷⁴ <https://en.wikipedia.org/wiki/Mustelidae>

⁷⁷⁵ <https://en.wikipedia.org/wiki/Bat>
<https://www.si.edu/spotlight/bats/batfacts>

⁷⁷⁶ <https://en.wikipedia.org/wiki/Snake>

According to traditional Watch Tower teaching, all animals were created vegetarians, and some magically became predators after the fall of Adam and Eve in the Garden of Eden. Such magic would have required a supreme engineer (God?) to modify all manner of animals into predators with all their predatorial specializations: predacious instincts, venom, the ability to inject venom, the instincts required to use venom from infancy; the same for the ability to constrict prey. Not only snakes, but all animals would have had to magically develop these abilities immediately after Noah's Flood from just a few "kinds" of founders.

Obviously, such rapid evolution—and evolution it is—is impossible.

Major Genetic Bottlenecks

About 74,000 years ago, the largest volcanic explosion in the last 28 million years occurred at the site of Lake Toba on the island of Sumatra in Indonesia.⁷⁷⁷ It was about a third larger than the largest of the Yellowstone eruptions in the last 2.2 million years and, at some 2,800 cubic kilometers, ejected more than 200 times the amount of volcanic ash as the 1883 Krakatoa eruption. The ash covered all of southeast Asia, and far beyond into India and Africa. Judging from a variety of physical evidences, it produced a global cooling of 5°C, with up to 15°C regionally, resulting in a volcanic winter that lasted a decade or more, and probably triggered global cooling that lasted another 1,000 years, as well as contributing to the ice age maximum that lasted until about 17,000 years ago.⁷⁷⁸ While there is some controversy in the science community about details,⁷⁷⁹ there is no controversy about the dating, where all non-young-earth-creationist scientists agree that humans were living in Africa 74,000 years ago. Humans were also in India at that time, as shown by the many stone tools that have been discovered beneath the 6 inch layer of Toba ash that blanketed the region.

As discussed above, archaeological studies, combined with DNA studies, show that several varieties of humans or near-humans were living in Africa and Eurasia as far back as 2 million years ago. These include *Homo erectus* and various types of "archaic *Homo sapiens*" (like Heidelberg Man). The latter split off into the Neanderthals, Denisovans, modern humans, and who knows what else? Recent DNA studies show that modern humans in Europe and Asia have an average of about 2% Neanderthal DNA, and many southeast Asians (including Polynesians and Australians) have about 2-4% Denisovan DNA. Apparently the Toba eruption killed off a large fraction of these, except for a few thousand in East Africa, a handful of Neanderthals in Europe, and another handful of Denisovans in Asia.

The volcanic winter seems to have killed off most plants in the ash-blanketed regions, as well as many animals, resulting in "genetic bottlenecks" as population numbers became extremely low, which reduced genetic diversity. According to various sources (cf. Prothero 2018), genetic studies have shown such bottlenecks at roughly 70,000 years ago for humans, tigers, various cat populations in Southeast Asia, cheetahs, pandas, South Asian macaques, orangutans, gorillas and chimpanzees. Donald Prothero writes about a consilience of evidence for the widespread effects of the Toba eruption (pp. 144-145):

The strangest of all contributors to this consilience is a bacterium in the gut of more than half of living humans. Known as *Helicobacter pylori*, it is found near the pyloric valve (between the stomach and the small intestine)

⁷⁷⁷ cf. https://en.wikipedia.org/wiki/Toba_catastrophe_theory
<https://www.youtube.com/watch?v=7MlNKz9vgXg> Stone Age Apocalypse

<https://www.youtube.com/watch?v=GlkijaN-wdo> The Biggest Volcanic Eruption in Human History

⁷⁷⁸ Donald R. Prothero, *When Humans Nearly Vanished: The Catastrophic Explosion of the Toba Volcano*, 2018, pp. 140-147.

⁷⁷⁹ cf. <https://www.smithsonianmag.com/smart-news/ancient-humans-weathered-toba-supervolcano-just-fine-180968479/>

and has been shown to cause ulcers. As a parasitic infection, it occurs in nearly every human population today, although it produces ulcers only in people whose stress level or stomach condition makes them vulnerable to its effects. When a large group of scientists led by Bodo Linz sequenced samples of *H. pylori* from people all over the earth in 2007, they were able to establish not only how the bacterium first infected our distant African ancestors but also when it spread to populations in Europe. Sure enough, the latter seems to have happened at some point before 58,000 years ago, about the time when human populations exploded in Eurasia after the Toba event.

Almost every organism whose DNA has been sequenced and that had ancestors in Eurasia about 70,000 years ago appears to show the same phenomenon: a population bottleneck about 70,000 years ago, followed by a population expansion about 50,000 years ago. Naturally, most genetic sequencing so far has focused on large, charismatic mammals on which people like to spend research money, such as pandas, tigers, orangutans, chimps, and gorillas. Who knows what surprises lurk in the genomes of the rest of the population of animals that have long lived in Eurasia? Only further investigation will tell.

If major genetic bottlenecks exist in so many animals that have been dated by both fossil and DNA evidence to some 74,000 years ago, then how much more so would such bottlenecks exist that would be dated to 4,400 years ago, to Noah's Flood, especially given that animal populations would have been down to just two! The fact that such recent bottlenecks have not been found, despite much genetic study, shows that there was no such global catastrophe 4,400 years ago.

Summary of How Many “Kinds” Exist

At this point it should be obvious that far more “kinds” of animals exist than the Society has traditionally allowed for populating Noah's ark, and that no matter what the actual numbers might have been, these animals must have diversified at an incredible rate immediately after Noah's Flood, splitting into lions, housecats, and myriads of others within a few hundred years. This rate would have been at least ten thousand times higher than anything seen in the fossil record or proposed by evolutionists. Not only is this completely implausible, but it is impossible.⁷⁸⁰ And of course, there is no evidence for it. Watch Tower writers appear to be well aware of these problems, as they've always steered well clear of them.

Watch Tower writers have long borrowed (almost always without attribution) most of their arguments from young-earth creationists. YECs are at somewhat of a disadvantage in arguing for Noah's Flood and against evolution, since their basic thesis is that the entire universe was created about 6,000 years ago, which goes against all science, as even Watch Tower writers admit. But YECs and the Watch Tower have in common the claim that Noah's Flood occurred about 4,400 years ago, and was global in extent. Until the mid-1980s they also had in common a teaching that God created all animal life recently—6,000 years ago for YECs; 20,000 years ago for the Watch Tower Society. Since the mid-1980s the Watch Tower has adopted a weaselly “don't look, don't tell” position by saying that the creative days were an unspecified number of “millennia” long, which allows for belief in both the traditional 7,000-year-day claim and perhaps a much longer time frame (but they ain't saying) to exist alongside one another.

YECs and the Watch Tower also claim that God created various “kinds” of animals (which they never clearly define), which Noah took on board the ark, and which evolved hyper-rapidly after the Flood into the millions of species that exist today. Both YECs and the Watch Tower insist that their literal interpretations of Genesis are the only possible interpretations, but most Christians disagree, because those interpretations disagree so grossly with science. Watch Tower writers have the additional

⁷⁸⁰ cf. <https://www.youtube.com/watch?v=mU5yirqEopA>

albatross around their necks of traditional Watch Tower chronology, which sprang from speculations that gradually evolved from various Christian commentators up through the late 19th century.

The advent of the Internet in the early 1990s sparked the creation of all manner of discussion/debate forums, and of course all of the above issues were debated. YECs and Watch Tower apologists invariably lost the debates (except in their own minds) because most of their arguments boiled down to something like, “The Bible says it’s true, and I have faith”, irrespective of scientific findings. This, of course, is like someone saying, “The Bible says the moon is made of cheddar cheese, and I have faith in that.” Over time, people who respect science have sharpened their arguments and set forth data that fully disproves Fundamentalist claims. In addition to hundreds of books and magazine articles and Websites, various commentators have put out reasonably good layman-oriented summaries of these debates. Here is an especially good one:

How Zoology Disproves Noahs Flood
<https://www.youtube.com/watch?v=i0J5WMmykEs>

So the arguments made by Watch Tower writers are scholastically dishonest, not only because they misrepresent the actual situation with respect to animal evolution/variation after Noah’s Flood, but they pretend that they’ve given valid arguments when all they’ve provided is speculation and special pleading.

Misrepresentation of the Fossil Record

As shown above, especially in the section on the *Origin of Life* brochure (page 164), Watch Tower writers have traditionally misrepresented what is in the fossil record. They have used dishonest creationist sources for many of their arguments and have borrowed exactly the same dishonest arguments, misquotes, and misrepresentations of the same source references. On occasion they have branched out and come up with their own dishonest claims with no outside help.

Watch Tower writers obviously have little knowledge of the fossil record. Why can this be said? Because they do not study any solid scientific material on geology, paleontology, the fossil record, and so forth, with the goal of understanding the science. Rather, they study older Watch Tower literature, often reusing old material that is now 70 years old and obsolete. Their goal appears to be to find material they can twist into an appearance of supporting Watch Tower traditions. They also study creationist literature, not seeming to realize or care that this garbage is often even more dishonest than their own.

I will suggest a remedy to you Governing Body men, and especially you men in the Writing Department: take some real college courses in sciences like geology, paleontology, evolutionary biology, and archaeology, and try to understand what you've been taught. Then see if you can teach the basics to your followers.

Another useful exercise would be to read some good books on fossils, paleontology, and so forth. In my opinion the best layman's book on fossils available in 2022 is by paleontologist Donald Prothero, *Evolution: What the Fossils Say and Why It Matters*,⁷⁸¹ which shows plenty of fossil appearances in the geological record along with their relationship to fossils that appeared before and after. Prothero gave a related lecture in 2015⁷⁸² in which he summarized some of the contents of the first edition of his book. I suggest that all you Governing Body and Writing Staff members watch this video repeatedly until you understand it—"repetition for emphasis", right? Perhaps you'll realize how dishonest you've been about evolution, both in your own minds and in how you've misrepresented it to your followers.

Here other some other books that are especially useful for the non-specialist. See the bibliography for full references:

- Neil Shubin, *Your Inner Fish: A Journey into the 3.5-Billion-Year History of the Human Body*, 2009.
- Richard Dawkins, *The Greatest Show on Earth: The Evidence for Evolution*, 2009.
- Jerry A. Coyne, *Why Evolution Is True*, 2009.
- Steve Brusatte, *The Rise and Fall of the Dinosaurs: A New History of a Lost World*, 2018.
- Donald R. Prothero, *When Humans Nearly Vanished: The Catastrophic Explosion of the Toba Volcano*, 2018.
- Richard Dawkins, *The Greatest Show on Earth: The Evidence for Evolution*, 2009.
- Richard Dawkins, *The Ancestor's Tale: A Pilgrimage to the Dawn of Evolution*, 2016.
- Richard Dawkins, *The Magic of Reality: How We Know What's Really True*, 2011.
- Gerald Mayr, *Avian Evolution: The Fossil Record of Birds and its Paleobiological Significance*, 2017.
- G. Brent Dalrymple, *The Age of the Earth*, 1991.
- Kenneth R. Miller, *Finding Darwin's God: A Scientist's Search for Common Ground Between God and Evolution*, 1999.
- Francis S. Collins, *The Language of God: A Scientist Presents Evidence for Belief*, Free Press, 2006.

Here are some references to videos that should help educate you. No doubt the more educated among you will recognize how the presenters, in debunking various creationist claims, also debunk many of your own claims:

⁷⁸¹ Donald Prothero, *Evolution: What the Fossils Say and Why It Matters*, 2nd edition, 2017.

⁷⁸² <https://www.youtube.com/watch?v=DjFgcOld-ZY>

How Creationism Taught Me Real Science 63 Bird Evolution

<https://www.youtube.com/watch?v=moRvOWH30gg>

How Creationism Taught Me Real Science 64 Mammal Evolution

<https://www.youtube.com/watch?v=8Ky3bfbRcHU>

How Creationism Taught Me Real Science 55 Whale Evolution

https://www.youtube.com/watch?v=TEkcw_M8nfw

How Creationism Taught Me Real Science 56 Horse Evolution

<https://www.youtube.com/watch?v=ZPYM5oD6Ojk>

Science of Genesis Paradise Lost – Part 6 Enter the Dinosaur

https://www.youtube.com/watch?v=5tJr1_a8U3A&index=6&list=PLpdBEstCHhmXR55GQqgHHP53S3vRddOd

In Search Of Eden

<https://www.youtube.com/watch?v=jjuyYFn1cXk>

Why atavisms (throwbacks) are good evidence for evolution.

https://www.youtube.com/watch?v=l6cJt_2YGgg

Impossible Baraminology—debunking the pseudoscience of “created kinds”.

<https://www.youtube.com/watch?v=NWzPYCtHOvc>

Creationists Vs Transitional Fossils – DEBUNKED! Debunking a creationist critique of Archaeopteryx and Tiktaalik as not being transitional between animal groups.

<https://www.youtube.com/watch?v=jVKZuSdu-bA>

Where are the Transitional Fossils?

<https://www.youtube.com/watch?v=is457IqwL-w>

The Rise and Fall of the Bone-Crushing Dogs—huge doglike carnivores that existed for 30 million years.

<https://www.youtube.com/watch?v=sZhxCUay5ks>

The Evidence For Evolution Made Easy—bears on why hyper-rapid evolution after Noah’s Flood is impossible.

<https://www.youtube.com/watch?v=Jw0MLJJbqc>

A Neanderthal Perspective on Human Origins with Svante Pääbo – 2018—bears on the antiquity of Neanderthals and Denisovans, and why the fact that modern non-African humans have 1% to 5% of their DNA proves that they were not just a variety of people who lived immediately after Noah’s Flood.

<https://www.youtube.com/watch?v=R1R8yrEGAgw>

Were the Pyramids Built Before the Flood? (Masoretic Text vs. Original Hebrew)—evidence and arguments why figures for human lifespans given in the Masoretic Text yield dates for events in the Bible entirely inconsistent with well-established archaeology.

<https://www.youtube.com/watch?v=VI1yRTC6kGE>

You Watch Tower leaders are frightened of any facts that go against your beliefs and traditions. When presented with such facts you circle the wagons mentally and engage in all manner of intellectual subterfuge to deny them. This is called cognitive dissonance. Author Frantz Fanon wrote:⁷⁸³

Sometimes people hold a core belief that is very strong. When they are presented with evidence that works against that belief, the new evidence cannot be accepted. It would create a feeling that is extremely uncomfortable, called cognitive dissonance. And because it is so important to protect the core belief, they will rationalize, ignore and even deny anything that doesn’t fit in with the core belief.

Social psychologist Leon Festinger had much to say about cognitive dissonance. His 1956 book *When Prophecy Fails*⁷⁸⁴ showed how certain cultic groups deal with failed predictions by their leaders

⁷⁸³ <https://www.ncrp.org/2015/09/keeping-an-open-mind-about-education.html>

⁷⁸⁴ https://en.wikipedia.org/wiki/When_Prophecy_Fails

—they pretend it did not happen, then dig in their heels even more firmly concerning their belief systems. Watch Tower leaders predicted “the end” for 1975, then gradually convinced their followers that it was all in their heads, since their inspired leaders could not possibly have been wrong.

Regarding evolution, you accept all manner of science and use its products, but not evolution. Why? I suspect for at least two reasons: none of you are educated much beyond what you’ve been taught in your own publications, which are in turn produced by men grossly ignorant of science, and you’re deathly afraid of the implications of admitting that perhaps your God is not what you’ve always believed. You will not even *consider* theistic evolution of any sort, since that might be a foot in the door to admitting that your traditions are wrong and perhaps other religionists have been right. Although you claim to reject young-earth creationism, along with its wholesale rejection of science, you still accept most of its claims.

But as science teacher Bill Nye said:⁷⁸⁵

The natural world is a package deal; you don’t get to select which facts you like and which you don’t.

Scientist Neil deGrasse Tyson said:⁷⁸⁶

When different experiments give you the same result, it is no longer subject to your opinion. That’s the good thing about science. It’s true, whether or not you believe in it. That’s why it works.

That is why you men go to qualified doctors in the Bethel infirmary rather than witch doctors.

Geneticist Theodosius Dobzhansky famously said:⁷⁸⁷

Nothing in biology makes sense except in the light of evolution.

⁷⁸⁵ <https://quotefancy.com/quote/995351/Bill-Nye-The-natural-world-is-a-package-deal-you-don-t-get-to-select-which-facts-you-like>

⁷⁸⁶ https://www.salon.com/2014/03/11/neil_degrasse_tyson_science_is_true_whether_or_not_you_believe_in_it/#:~:text=%22What%20I'm%20saying%20is,That's%20why%20it%20works.%E2%80%9D

⁷⁸⁷ https://en.wikipedia.org/wiki/Nothing_in_Biology_Makes_Sense_Except_in_the_Light_of_Evolution

The Flood

The story of Noah's Flood as told in Genesis 6-9 is fundamental to Judeo-Christian belief, whether believers are biblical literalists or of the more liberal persuasions. It is the basis for much of the supposedly historical material in the rest of Genesis as well as statements in the Old Testament about Noah or the Flood in 1 Chronicles, Isaiah, and Ezekiel, and in the New Testament in Matthew, Luke, Hebrews, and 1 & 2 Peter.

Geology and science in general make it certain that no global Flood occurred between 4,000 and 10,000 years ago, contrary to what the chronologies of the Watch Tower Society and various other biblical literalist sects claim. The required physical evidence is simply not there.⁷⁸⁸

On the other hand, there is evidence that *some* sort of major but *local* flood or floods occurred in the Near East and/or Mesopotamian regions a few thousand years ago. The region in the Tigris and Euphrates River valleys is prone to periodic flooding; limited flood deposits have been found dating back to the time of the earliest settlements 10,000 years ago. Significant floods have occurred in the greater Near East area as well, and probably gave rise to multiple flood stories. Over time several of these were probably merged by story-telling and became the legends of Noah's Flood that were common in Sumeria and the rest of the Near East. Travelers likely told these flood stories to people in the distant regions they visited, and the resulting combined stories spread far and wide. The story in Genesis displays good evidence of this in that there are two different flood stories that have been edited and intertwined. Various scholars have separated the two stories and published them; each makes complete sense on its own.⁷⁸⁹

Problems With the Evidence

As discussed in several headings above, all of the supposed physical evidence for the Flood presented by the Watch Tower Society since the days of C. T. Russell is at best marginal, at worst complete nonsense. The Society has presented very little positive physical evidence. Mostly it has given extremely poor, nonsensical or downright false criticisms of the scientific evidence against the Flood and related notions, as if by knocking down such evidence the Flood story is left standing. Below are some examples of such bogus and poor evidence, and of problems with the Society's claims. Page numbers refer to this paper.

Isaac Newton Vail's "Annular Theory": taught from 1881 until replaced by young-earth creationist "flood geology" in the early to mid-1960s (pages 11, 16). This notion proposed that before the Flood there existed Saturn-like rings around the earth, the last of which collapsed around the poles and produced the Flood. The entire mechanism is physically impossible.

Young-earth creationist "flood geology": taught explicitly from about 1965 to 1980, implicitly until about 1989 (pages 17, 101, and 127). This proposed that virtually all of the earth's sedimentary rocks, along with the fossils contained, were deposited during the one year of the Flood, ignoring most of geology and paleontology.

⁷⁸⁸ cf. <https://critiquesonthewatchtower.org/old-articles/2006/02/part-1-general-description-of-flood.html>

⁷⁸⁹ cf. Howard M. Teeple, *The Noah's Ark Nonsense*. Ch. 6, "The Story in the Bible".

Alan Dundes, ed. *The Flood Myth*. Section "The Two Flood Stories in Genesis" by Norman C. Habel. E. A. Speiser, *The Anchor Bible*. Vol. 1. *Genesis*. Ch. 8, "The Flood".

Vapor canopy: A physically impossible ‘vapor canopy’ containing the equivalent of thousands of feet of water fell down and provided much of the floodwater (see page 11), the balance coming from unspecified “springs of the vast watery deep”—clearly a reference to the primeval waters upon which the earth, or dry land, rested after its creation (page 306). This is a clear reference to the earth as a flat, circular, pizza-pie shaped object. Obviously, our spherical earth has no “vast watery deep” hiding beneath the earth’s crust.

Not enough water to flood the earth: Without miraculous creation of another three-oceans-worth of water, there is not enough water in the oceans to flood the earth and cover today’s mountains (pages 11, 103, 122, 127, 129). If the earth were entirely smooth, the water would be about 8,000 feet deep. But many mountains far more than 8,000 feet above sea level exist. The claim that today’s high mountains all rose after the Flood 4,400 years ago contradicts all manner of science, including geology, paleontology and plate tectonics. The Big Island of Hawaii rises some 33,000 feet above the sea floor and contains some 186,000 cubic miles of basalt lava—a quantity impossible to emplace in a few hundred years without producing enough poisonous gases (like sulfur dioxide) to poison the atmosphere for thousands of years to come.

Not enough water exists today: If God had miraculously created enough water to flood the earth so as to cover today’s high mountains, then where is that water today? Today’s oceans contain only about one fourth enough water to do the job, given that the highest mountains did not form just within the last 4,400 years. In its most recent attempt to address this problem the Society’s author proposed that the deep trenches where tectonic plates dive under others are of sufficient volume to contain all that water (see page 131). This physically impossible proposal shows how ignorant Watch Tower writers are of even basic science.

High mountains are only 4,400 years old: High mountains like the Himalayas, Andes, Alps, Rockies, etc. are many tens of millions of years old. Often the mountain ranges that some were built upon are hundreds of millions of years old. Mount Kilimanjaro in Tanzania, at 19,000 feet, is some 2.5 million years old.⁷⁹⁰ Mount Ararat in Turkey, at 17,000 feet, is as much as 1.5 million years old.⁷⁹¹ The Himalayas, up to 29,000 feet high, began to rise between 20 and 30 million years ago when the Indian Plate began to crash into the Asian Plate.⁷⁹² The Andes, up to 23,000 feet along the western edge of South America, rose by fits and starts beginning about 230 million years ago.⁷⁹³ The present Rocky Mountains in western North America, over 14,000 feet high, formed between 80 and 55 million years ago⁷⁹⁴ atop the remains of the ancestral Rockies that arose some 300 million years ago. The Alps, at nearly 16,000 feet, formed by fits and starts beginning 300 million years ago.⁷⁹⁵ The Appalachian Mountains of eastern North America, up to 6,000 feet high, began forming some 480 million years ago when ancient North America and Africa collided, forming the supercontinent Pangea⁷⁹⁶ and rising as high as today’s Alps and Rockies.

Ocean basins were very shallow until the Flood: Ocean basins have existed for nearly the entire age of the earth. No one knows when true continents began to form, but the ages of much of the earth’s crust that forms the ocean basins have been studied since the 1940s. Geological studies show that

⁷⁹⁰ https://en.wikipedia.org/wiki/Mount_Kilimanjaro

⁷⁹¹ https://en.wikipedia.org/wiki/Mount_Ararat

⁷⁹² <https://en.wikipedia.org/wiki/Himalayas>

⁷⁹³ <https://en.wikipedia.org/wiki/Andes>

⁷⁹⁴ https://en.wikipedia.org/wiki/Rocky_Mountains

⁷⁹⁵ <https://en.wikipedia.org/wiki/Alps>

⁷⁹⁶ https://en.wikipedia.org/wiki/Appalachian_Mountains

tectonic plates, i.e., discrete sections of ocean and continental crust, have been moving around for some four billion years.⁷⁹⁷ Today's Pacific Plate⁷⁹⁸ averages about 13,000 feet below sea level, with a maximum depth in the Mariana Trench of 36,000 feet. At spreading centers the youngest ocean crust is brand new,⁷⁹⁹ but some of the oldest areas east of the Kamchatka Peninsula, where the Pacific Plate dives under the Asian and North American Plates at the northwest end of the Emperor Seamount chain and forms the Aleutian and Kuril-Kamchatka Trenches,⁸⁰⁰ are older than 80 million years.⁸⁰¹ It is simply not possible for all the geological events in the Pacific to have occurred in the past 4,400 years. Furthermore, if the ocean basins were shallow until only 4,400 years ago, God would have had to create nearly all of today's ocean water at that time—again grossly unreasonable overkill if God's goal were to eliminate wicked humans.

Frozen mammoths in the Arctic: At various times in the Pleistocene Ice Age of the past 2.6 million years (see page 132), as well as in the previous 25 million years, all manner of animals and plants were buried in unfrozen sediments in the Arctic that later froze and sometimes were buried for long periods of time. Most of the discovered burials occurred during the last ice age of this Ice Age, between about 125,000 and 12,000 years ago. Mammoths, the most notorious of these, were often buried, and their huge remains have sometimes lasted 40,000+ years (pages 10, 18-24, 26, 42, 135, 322, 329). As people wandered in the Arctic during the past few thousand years, sometimes frozen remains became uncovered, leading to a variety of unscientific ideas about how they got there. Especially during the 19th century certain European writers, all non-geologists, came up with pseudo-scientific theories about these remains, not based on first hand exploration but on hearsay and myth. The 20th century had its share of pseudo-scientists making similar non-factual claims. The Watch Tower Society's writers latched on to these ideas, since these were in line with their ideas of the catastrophes they thought must have accompanied Noah's Flood. At various times they advanced them as if they were valid science. But discoveries and expositions by real scientists have shown that these ideas are nonsense.⁸⁰² Even young-earth creationists, who for decades promoted the notion of "quick-frozen mammoths", have given up on the idea.⁸⁰³ The Society's writers seem to have realized some of this since the late 1980s, since they have not written about such notions since then.

Flood features supposedly misinterpreted to be glacial remains from the ice ages: Especially beginning in the 1960s, after the Society's writers got hold of the young-earth creationist book *The Genesis Flood*, the Watch Tower Society's official stance became that virtually all geological evidence that geologists interpreted as confirmation of The Ice Age and the accompanying continental glaciers of Northern North America, Europe and much of Asia was really evidence for Noah's Flood. But during

⁷⁹⁷ <https://www.youtube.com/watch?v=Z22sN3vVWC4>

⁷⁹⁸ <https://www.usgs.gov/media/images/pacific-plate-boundaries-and-relative-motion>

⁷⁹⁹ https://en.wikipedia.org/wiki/Seafloor_spreading

⁸⁰⁰ https://en.wikipedia.org/wiki/Aleutian_Trench

⁸⁰¹ <https://www.nature.com/articles/ncomms15660>

⁸⁰² <http://www.talkorigins.org/faqs/mammoths.html>

http://www.talkorigins.org/indexcc/CC/CC361_2.html

<http://www.talkorigins.org/faqs/hovind/howgood-add.html>

<https://www.google.com/search?>

[q=quick+frozen+mammoth&aq=chrome..69i57j0i22i30j0i10i22i30j0i390j69i61i2.7267j0j15&sourceid=chrome&ie=UTF-8#kpvallbx=_N0bGYeqyBrOP9PwPs5S4iAQ24](https://www.google.com/search?q=quick+frozen+mammoth&aq=chrome..69i57j0i22i30j0i10i22i30j0i390j69i61i2.7267j0j15&sourceid=chrome&ie=UTF-8#kpvallbx=_N0bGYeqyBrOP9PwPs5S4iAQ24)

⁸⁰³ <https://answersingenesis.org/extinct-animals/ice-age/were-siberian-mammoths-quick-frozen/>

<https://www.icr.org/article/did-frozen-mammoths-die-flood-or-ice-age/>

<https://creation.com/the-extinction-of-the-woolly-mammoth-was-it-a-quick-freezehttps://creation.com/the-extinction-of-the-woolly-mammoth-was-it-a-quick-freeze>

the 1950s and 1960s a great deal of unequivocal geological evidence has shown that most young-earth creationist claims are nonsense.⁸⁰⁴

Polar ice caps are post-Flood: The huge ice caps of Antarctica and Greenland must have developed after Noah's Flood, since hothouse conditions would not have allowed them to develop earlier. But by drilling into the ice caps and analyzing ice cores layer by layer, going back more than 800,000 years in Antarctica⁸⁰⁵ and upwards of 130,000 years in Greenland,⁸⁰⁶ geologists have shown that these ice caps are far older than the 4,400 years allowed by Watch Tower chronology. Indeed, had these masses of ice existed before the Flood, they would have floated on the floodwaters and broken up or drifted somewhere else. The ice cores contain more than 100,000 year-by-year layers containing all manner of geological signatures, such as ash and chemicals from volcanic eruptions, pollen grains that parallel the seasons, etc. Many volcanic eruptions have been dated to within a few years by analyzing these cores.⁸⁰⁷

Watch Tower Society ignores what actual massive floods do: Massive floods such as the Missoula⁸⁰⁸ and Altai⁸⁰⁹ floods—not global, but local, since their boundaries are evident in the local geology—occurred toward the end of the last ice age as glaciers melted, and probably during the entire 2.6 million year period of the Pleistocene Ice Age. These floods show what huge floods actually do, such as leaving huge deposits of boulders and gravel and drastically carving bedrock in limited channels, such as carving the English Channel⁸¹⁰ and the Hudson River channel in New York State,⁸¹¹ with its Palisades cliffs in New Jersey⁸¹² across the river from New York City. A global Flood would leave such evidence *everywhere* on the land, not just in limited areas such as river valleys. Such evidence, limited in extent to clearly bounded areas, proves there was no global flooding a few thousand years ago.

Varieties of humans went extinct long before the Flood: Genetic studies in the early 21st century showed that Neanderthals⁸¹³ and Denisovans⁸¹⁴ were distinct subspecies of humans, able to interbreed with modern people (*Homo sapiens*) but distinctively different. They went extinct much earlier than 4,400 years ago. Their DNA is found in all modern non-African people from Europe to Asia to Australia. We have hundreds of Neanderthal remains, from full skeletons to bits and pieces of bones, and cultural remains such as tools, campfires, and burial sites dating from more than 400,000 years to 40,000-30,000 years ago. According to Watch Tower writings Neanderthals were fully modern humans. Hence, all traces of Neanderthals must be younger than the 4,400 years since the Flood according to the Society's claims. Where is the evidence for these claims? There is none. Such claims are pure rationalization, mere speculation and special pleading.

⁸⁰⁴ <https://critiquesonthewatchtower.org/old-articles/2006/02/part-1-general-description-of-flood.html>

⁸⁰⁵ <https://www.antarcticglaciers.org/glaciers-and-climate/ice-cores/ice-core-basics/>

⁸⁰⁶ <https://icecores.org/about-ice-cores>

⁸⁰⁷ <https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2020JD032855>

⁸⁰⁸ https://en.wikipedia.org/wiki/Missoula_floods

<https://critiquesonthewatchtower.org/old-articles/2006/02/part-12-documented-flooding-in-pacific.html>

<https://www.nps.gov/iafl/index.htm>

<https://iafi.org/about-the-ice-age-floods/introduction/>

⁸⁰⁹ https://en.wikipedia.org/wiki/Altai_flood

⁸¹⁰ <https://www.nature.com/articles/news070716-11>

<https://phys.org/news/2017-06-collapse-european-ice-sheet-chaos.html>

⁸¹¹ <https://www.who.edu/oceanus/feature/the-great-flood-of-new-york/>

⁸¹² [https://en.wikipedia.org/wiki/The_Palisades_\(Hudson_River\)](https://en.wikipedia.org/wiki/The_Palisades_(Hudson_River))

⁸¹³ <https://en.wikipedia.org/wiki/Neanderthal>

⁸¹⁴ <https://en.wikipedia.org/wiki/Denisovan>

More Resources Relevant to the Flood Story

There exist countless debunkings of the Noah's Flood story. A few references and links are here in footnotes.⁸¹⁵

References I've found helpful in giving a non-fundamentalist perspective.⁸¹⁶

Full references are in the bibliography.

⁸¹⁵ <https://www.jwfacts.com/watchtower/flood-noah-global.php>
<https://www.youtube.com/watch?v=W9XryKMRATE>

On the two intertwined flood stories in Genesis:

Howard M. Teeple, *The Noah's Ark Nonsense*. Ch. 6, "The Story in the Bible".

Alan Dundes, ed. *The Flood Myth*. Section "The Two Flood Stories in Genesis" by Norman C. Habel.

E. A. Speiser, *The Anchor Bible*. Vol. 1. *Genesis*. Ch. 8, "The Flood".

⁸¹⁶ Lloyd R. Bailey, *Noah: The Person and the Story in History and Tradition*.

Davis A. Young, *The Biblical Flood: A Case Study of the Church's Response to Extrabiblical Evidence*.

Davis A. Young, *Creation and the Flood: An Alternative to Flood Geology and Theistic Evolution*.

Don Cameron Allen, *The Legend of Noah*.

William Ryan & Walter Pitman, *Noah's Flood: The New Scientific Discoveries About the Event that Changed History*. An examination of the so-called "Black Sea Flood", a somewhat contentious idea that nevertheless has interesting scientific evidence behind it.

Proofs that Jehovah's Witnesses Do Not Speak for God

False Teaching On the Resurrection Proves Jehovah's Witnesses Are Not "God's People"

A simple proof that Jehovah's Witnesses do not comprise "God's organization" or "God's people" is found in their doctrine that false teachings about "the resurrection of the saints" constitute apostasy. The following argument proves this using only the Bible and Watch Tower publications.

The April 1, 1986 *Watchtower* magazine argues (pp. 30-31) that anyone who disagrees with JW doctrine, even in the smallest degree, is an apostate even if the person has full faith in God. To prove it, the article cites the passage in 2 Timothy 2:17, 18 where the apostle Paul speaks of Hymenaeus and Philetus teaching that "the resurrection has already occurred" and says that "these very men have deviated from the truth". The Society then comments:

There is nothing to indicate that these men did not believe in God, in the Bible, in Jesus' sacrifice. Yet, **on this one basic point, what they were teaching as to the time of the resurrection, Paul rightly branded them as apostates, with whom faithful Christians would not fellowship.**

From this we may conclude that Watch Tower doctrine is that anyone who teaches that the resurrection has already occurred, when it has not, is an apostate with whom true Christians would not fellowship.

Unfortunately for the JWs, this perfectly describes what the Watch Tower organization taught for much of its history. Note what the *1975 Yearbook of Jehovah's Witnesses* (p. 148) had to say about the Society's early view of the resurrection:

Advancement in understanding God's Word brought about some other adjustments in Christian thinking. According to Grant Suiter, the late 1920's were noteworthy along these lines. He says: "Modification of viewpoints respecting scriptures and matters of procedure seemed to be constant during these years. For example, **it was in 1927 that *The Watch Tower* pointed out that the sleeping faithful members of the body of Christ were not resurrected in 1878 [as once thought].**

Consistent with this, the 1993 book *Jehovah's Witnesses—Proclaimers of God's Kingdom* described C. T. Russell's and his Bible Students' teachings (p. 632):

Based on the premise that events of the first century might find parallels in related events later, they also concluded that if Jesus' baptism and anointing in the autumn of 29 C.E. paralleled the beginning of an invisible presence in 1874, then his riding into Jerusalem as King in the spring of 33 C.E. **would point to the spring of 1878** as the time when he would assume his power as heavenly King. **They also thought they would be given their heavenly reward at that time. When that did not occur, they concluded that** since Jesus' anointed followers were to share with him in the Kingdom, **the resurrection to spirit life of those already sleeping in death began then.**

In other words, until 1927 the Society was teaching that "the resurrection has already occurred". Therefore all Bible Students who accepted and taught this false doctrine were apostates.

So according to their own words as stated in the April 1, 1986 *Watchtower*, “on this one basic point, what they were teaching as to the time of the resurrection,” Watch Tower leaders up to 1927 may properly be branded “as apostates, with whom faithful Christians would not fellowship.” This negates the Society’s teaching that in 1919 Christ appointed Watch Tower leaders “over all his belongings”, for how could Christ appoint apostates over anything? Watch Tower leaders are guilty of setting themselves up as leaders of Christians and of lording it over the “flock of God”, whereas the only leader Christians are supposed to have is Christ.

Of course, the above conclusion might be refuted by showing that the reasoning presented in the April 1, 1986 *Watchtower* is false, namely, by showing that it is not true that anyone who teaches something that contradicts the Bible is an apostate. But that would be arguing that the *Watchtower*’s argument is false, which means that JW leaders are false teachers and therefore, by their own definition, “false prophets”. Furthermore, the Society has for decades been disfellowshipping people for what it calls “apostasy”, which is nothing more than believing or teaching things that contradict Watch Tower doctrines—which the Society claims perfectly represent Bible teachings. But if its doctrine does not perfectly reflect Bible teaching—and the above example about the resurrection proves that it does not—then the Watch Tower is guilty of wrongfully disfellowshipping people merely for disagreeing with it. Since disfellowshipping is essentially declaring that a person is grossly and unrepentantly wicked, wrongfully disfellowshipping someone is declaring that an innocent person is wicked. What does Jehovah think of this? Note what Proverbs 17:15 states:

Anyone pronouncing the wicked one righteous and **anyone pronouncing the righteous one wicked—even both of them are something detestable to Jehovah.**

So according to the Watch Tower Society’s own arguments, the Watch Tower organization is either apostate or is detestable to Jehovah. So, we may conclude, are the people who, despite knowing these things, support it.

Finally, one might argue that anyone who *today* teaches something false about the resurrection is an apostate, but that it was alright for the Bible Students to do so back before 1927. But then one would be guilty of holding a double standard, which is again a gross sin, according to Proverbs 20:23: **“Two sorts of weights are something detestable to Jehovah, and a cheating pair of scales is not good.”**

No matter which way one argues, one cannot refute the clear implication of the false teaching about the resurrection that was held by Watch Tower leaders such as C. T. Russell and J. F. Rutherford from before 1878 until 1927, or of a false teaching about what constitutes apostasy: Jehovah’s Witnesses did not have God’s backing in 1919, and they do not have God’s backing today. They do not constitute “God’s organization” nor are they “God’s people”.

Why the Faithful Slave Doctrine Is False

The Watch Tower doctrine of “the faithful and discreet slave” (F&DS) is the fundamental teaching of the organization of Jehovah’s Witnesses, for it is the basis of its leaders’ claim to spiritual authority. The doctrine is based on a self-serving interpretation of Matthew 24:43-51. But a careful look at the passage proves that the doctrine is false. Note how the following reasoning works in a scenario where someone is being instructed how to challenge a JW elder to justify it.

Ask the elder to read a Bible passage and comment on it. Don’t let on at first that you’re going to be tackling the F&DS question, or he’ll make excuses and refuse to play along. Have him first read Matthew 24:36-44. Most any Bible translation is ok, but the *NIV* (*New International Version*) is quoted here:

36 No one knows about that day or hour, not even the angels in heaven, nor the Son, but only the Father. 37 As it was in the days of Noah, so it will be at the coming of the Son of Man. 38 For in the days before the flood, people were eating and drinking, marrying and giving in marriage, up to the day Noah entered the ark; 39 and they knew nothing about what would happen until the flood came and took them all away. That is how it will be at the coming of the Son of Man. 40 Two men will be in the field; one will be taken and the other left. 41 Two women will be grinding with a hand mill; one will be taken and the other left. 42 Therefore keep watch, because you do not know on what day your Lord will come. 43 But understand this: If the owner of the house had known at what time of night the thief was coming, he would have kept watch and would not have let his house be broken into. 44 So you also must be ready, because the Son of Man will come at an hour when you do not expect him.

Ask the elder exactly when “the Son of Man” will come. He’ll answer that he doesn’t know, since the event is yet future in the viewpoint of the passage and is tied to the future coming of “the great tribulation” and Armageddon. That is what you want to get him to admit—that the “coming” is in the future. Therefore he has admitted that the setting of the passage is in the future. This has been Watch Tower teaching for more than 30 years. Next make a brief comment that verses 45-46 mention “the faithful slave”, but you want him first to read Matthew 24:48-51:

48 But suppose that servant is wicked and says to himself, ‘My master is staying away a long time,’ 49 and he then begins to beat his fellow servants and to eat and drink with drunkards. 50 The master of that servant will come on a day when he does not expect him and at an hour he is not aware of. 51 He will cut him to pieces and assign him a place with the hypocrites, where there will be weeping and gnashing of teeth.

Watch Tower teaching is that the events described here are also in the future. Get the elder to admit this, too. You can look up the latest Watch Tower comments at jw.org. Finally have him read the crucial passage, Matthew 24:45-46:

“45 Who then is the faithful and wise servant, whom the master has put in charge of the servants in his household to give them their food at the proper time? 46 It will be good for that servant whose master finds him doing so when he returns.”

Don’t let the elder comment yet, but immediately point out that it is obvious that the passages immediately before and after the above are yet in the future, so logically this passage must describe future events. Why then, does the Society teach that it had a fulfillment in 1919? He will not be able rationally to answer. Pounce on this and state that this is proof that the leaders of the Watch Tower Society were not “appointed over all Christ’s belongings” in 1919, and therefore they are teaching a great falsehood, which makes them false teachers, and therefore—by their own definition—false prophets. It is grossly arrogant to take up for themselves a title like “faithful and discreet slave” when the Bible itself proves that this cannot be.

Failed Bible Prophecies the Society Ignores

A major goal of the Watch Tower Society has long been to set forth arguments that the Bible is the infallible Word of God. Unfortunately, as many commentators have pointed out, many of these fail on any number of accounts.

The above discussions on the Genesis creation account and Noah's Flood are cases in point. Another is the way the Society points to various Bible "prophecies" to argue that only God has the foresight to make prophecies for the far future that have proved so accurate that it has called them "history written in advance".⁸¹⁷ The so-called "1914 prophecy" discussed above is another.

Watch Tower history is chock full of examples where its leaders and writers have speculated wildly on things not clearly stated in the Scriptures, or not stated at all.⁸¹⁸ C. T. Russell was certain that all manner of dates up through 1914 had seen or would see the fulfillment of "prophecies" that have proved to be only his private speculations. 1874 was supposedly the year that began "Christ's invisible presence".⁸¹⁹ When that proved untenable, in 1943 it was officially changed to 1914.⁸²⁰ Of course, because the Society has claimed since 1923 that all manner of catastrophes that kill millions of people at a clip began in 1914, but world population has ballooned between 1900 and 2022 from one to nearly eight billion, the 1914 date is also kaput.

The Bible contains many stories that biblical fundamentalists have claimed are prophecies about future events. These include the supposed hundreds of "Messianic prophecies" in the Old Testament. Much has been written about these, with the general result that nearly all such claims have been shown to be instances of special pleading⁸²¹ by authors who have no prior commitment to biblical infallibility.

It goes without saying that any clear instance of false prophecy in the Bible disqualifies it as infallible, and certainly as the infallible Word of God, just as any clear instance of a false statement about reality would.

Many people have pointed out in books and online forums that the prophet Ezekiel made false prophecies about the fate of the Phoenician city Tyre⁸²² and that Nebuchadnezzar would conquer Egypt. Let's look at the facts.

Tyre was founded early in the 3rd millennium BCE, and apparently was an island city early on. Eventually it incorporated the city that was onshore close to it, and it became a dual city. From about 586-573 BCE, Nebuchadnezzar, king of Babylon, besieged the city but failed to take it (historical records are unclear about the fate of the mainland part of the city). In 332 BCE, Alexander the Great conquered the island city and killed most of its inhabitants. It has been inhabited more or less

⁸¹⁷ *The Watchtower*, July 15, 2005, p. 6.

⁸¹⁸ *Jehovah's Witnesses—Proclaimers of God's Kingdom*. 1993, p. 135: "As the years passed and they examined and reexamined the Scriptures, their faith in the prophecies remained strong, and they did not hold back from stating what they expected to occur. With varying degrees of success, they endeavored to avoid being dogmatic about details not directly stated in the Scriptures." This passage is laughably dishonest.

⁸¹⁹ See the discussion of various Watch Tower dates here:

<https://critiquesonthewatchtower.org/old-articles/2006/02/index.html>

⁸²⁰ See Appendix A in <https://critiquesonthewatchtower.org/new-articles/2019/02/parousia.pdf> Beginning in 1930 the 1874 date was migrated by fits and starts to 1914. By 1943 the process was complete.

⁸²¹ cf. Howard M. Teeple, *The Historical Approach to the Bible*, 1982.

⁸²² https://rationalwiki.org/wiki/Biblical_prophecies#Wrong_prophecies
<http://etb-biblical-errancy.blogspot.com/2012/04/ezekiels-prophecy-of-tyre-failed.html>

continuously ever since, and was a major supplier of purple dye in Roman times, including in the 1st century CE. Today it is named Sur, is the 4th largest city in Lebanon, and has over 200,000 inhabitants.⁸²³

Ezekiel prophesied the complete destruction of Tyre, to happen soon after Jerusalem's destruction in 587 BCE, followed by its *everlasting* desolation. Ezekiel chapters 26 through 28 contain the complete text, of which we'll look at a few passages (*NWT*):

Ezekiel 26:1-14, 19-21

In the 11th year, on the first day of the month, the word of Jehovah came to me, saying: 2 **“Son of man, because Tyre has said against Jerusalem, ‘Aha! The gateway of the peoples has been broken! Everything will come my way, and I will become rich now that she is devastated’; 3 therefore this is what the Sovereign Lord Jehovah says: ‘Here I am against you, O Tyre, and I will bring up many nations against you, just as the sea brings up its waves. 4 They will destroy the walls of Tyre and tear down her towers, and I will scrape away soil and make her a shining, bare rock. 5 She will become a drying yard for dragnets in the midst of the sea.’** “‘For I myself have spoken,’ declares the Sovereign Lord Jehovah, ‘and she will become plunder for the nations. 6 And her settlements in the countryside will be slaughtered by the sword, and people will have to know that I am Jehovah.’

7 **“For this is what the Sovereign Lord Jehovah says: ‘Here I am bringing King Nebuchadnezzar of Babylon against Tyre from the north; he is a king of kings, with horses, war chariots, cavalrymen, and an army of many soldiers. 8 He will destroy your settlements in the countryside with the sword, and he will build a siege wall and throw up a siege rampart against you and raise up a great shield against you. 9 He will pound your walls with his battering ram, and with his axes he will pull down your towers. 10 His horses will be so many that they will cover you with dust, and the sound of the cavalry, the wheels, and the chariots will cause your walls to shake when he enters your gates, like men storming a city with broken walls. 11 The hooves of his horses will trample down all your streets; he will kill your people with the sword, and your mighty pillars will crash to the ground. 12 They will loot your resources, plunder your merchandise, tear down your walls, and pull down your fine houses; then they will throw your stones and your woodwork and your soil into the water.’ 13 “‘I will put an end to the noise of your songs, and the sound of your harps will be heard no more. 14 **And I will make you a shining, bare rock, and you will become a drying yard for dragnets. You will never be rebuilt,** for I myself, Jehovah, have spoken,’ declares the Sovereign Lord Jehovah.**

19 **“For this is what the Sovereign Lord Jehovah says: ‘When I devastate you like the cities that are not inhabited, when I overwhelm you with the surging waters and the mighty waters have covered you, 20 I will bring you and those going down into the pit with you to the people of long ago; I will cause you to dwell in the lowest place, like the places of old that have been devastated, together with those going down into the pit, so that you may not be inhabited. Then I will glorify the land of the living. 21 “‘I will bring sudden terror upon you, and you will no longer be. They will search for you, but you will never again be found,’** declares the Sovereign Lord Jehovah.”

The first bolded passage above (vs. 2) indicates that Ezekiel wrote shortly after the destruction of Jerusalem by the Babylonians in 587 BCE. Clearly, he expected that Nebuchadnezzar would visit the same fate upon the nearby Tyre. This is not exactly a difficult prediction. The second bolded passage (vs. 3) indicates Ezekiel's intent that Tyre would soon be besieged.

The third and fourth bolded passages (vss. 5, 7) clearly state that Nebuchadnezzar, king of Babylon, would ravage Tyre—in particular, the island part of the city: “She will become a drying yard for dragnets in the midst of the sea.”

The third bolded passage is where the prophecy begins to break down. Indeed, shortly after Nebuchadnezzar took Jerusalem in 587 BCE, he besieged Tyre, and obviously attacked both the

⁸²³ https://en.wikipedia.org/wiki/Tyre,_Lebanon
https://www.biblicalstudies.org.uk/article_tyre.html

mainland and island parts of the city, but failed to take the island city. Ezekiel admits later that the prophecy was wrong, in Ezekiel 29:17-18:

17 Now in the 27th year, in the first month, on the first day of the month, the word of Jehovah came to me, saying: 18 “Son of man, King Nebuchadnezzar of Babylon made his army labor greatly against Tyre. Every head became bald, and every shoulder was rubbed bare. **But he and his army received no wages for the labor he expended on Tyre.**

Hence, we see a false prophecy from Ezekiel. It matters not that Alexander the Great took the island city some 240 years later; Ezekiel's prophecy clearly stated that **Nebuchadnezzar** would take the island city.

Ezekiel continues with the false prophecies in verses 14, 19, 21: “you will never be rebuilt; when I devastate you like the cities that are not inhabited; you will no longer be.” Yet the Bible states that Jesus preached in Tyre: Matthew 11:21, 22; 15:21; Mark 7:24, 31; that Jesus’ disciples preached in Tyre: Acts 21:3, 7; and that it was certainly inhabited: Mark 3:8; Luke 6:17, 10:13, 14; Acts 12:20. And of course, Tyre is a bustling city today of 200,000.

Some biblical apologists argue that Tyre no longer exists, despite its being inhabited today and having been inhabited since about 300 BCE. But the city is built upon the ruins of the old city, just as Jerusalem is built upon the ruins of the cities destroyed in 587 BCE and 70 CE. No one in his right mind would argue that Jerusalem does not exist.

Ezekiel 29:1-20

This passage states that Nebuchadnezzar would conquer Egypt and gain its riches and sovereignty over it for 40 years as compensation for his failure to conquer Tyre.

9 The land of Egypt will become a desolate and devastated place ... I will make the land of Egypt devastated and dry, a desolate wasteland ... it will not be inhabited for 40 years. 12 I will make the land of Egypt the most desolate of lands, and its cities will be the most desolate of cities for 40 years; and I will scatter the Egyptians among the nations and disperse them among the lands.”

... the word of Jehovah came to me, saying: 18 “Son of man, King Nebuchadnezzar of Babylon made his army labor greatly against Tyre. Every head became bald, and every shoulder was rubbed bare. But he and his army received no wages for the labor he expended on Tyre.

19 “Therefore this is what the Sovereign Lord Jehovah says, ‘Here I am giving the land of Egypt to King Nebuchadnezzar of Babylon, and he will carry off its wealth and take much spoil and plunder from it; and it will become wages for his army.’

20 “‘As compensation for his labor against her, I will give him the land of Egypt because they acted for me,’ declares the Sovereign Lord Jehovah.

While there is good historical evidence that Nebuchadnezzar did attack and plunder Egypt under king Amasis in 567 BCE, there is also good historical evidence that Egypt remained inhabited and fully functioning for some time under Amasis (ca. 570-526 BCE), because about 548 BCE he formed an alliance with the Babylonians, Croesus of Lydia, and Sparta against the Persians under Cyrus the Great. Thus, Egypt was never desolate and uninhabited for 40 years, and we have another failed prophecy from Ezekiel.

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