

The Biblical BC Chronologist

WHAT HAS BEEN IS REMOTE AND EXCEEDINGLY MYSTERIOUS. WHO CAN DISCOVER IT?

(Ecclesiastes 7:24)

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The Cause of Reduced Post-Flood Life Spans – Part II

Spin-offs frequently accompany scientific research. The topic of this series of articles is a spin-off resulting from the past several years of scientific research in the field of Biblical chronology—the present article itself shows how this is so. But it is much more than a casual spin-off. The topic of the reduction in human life span which followed the Flood is of extreme practical importance in several ways.

First, it is obviously of extreme importance from a human health perspective. All other health problems combined dwarf in significance relative to the more than ten-fold reduction in human life spans which followed the Flood, as discussed in the introductory article in this series.¹

Second, it is of extreme importance to Biblical historicity and apologetics—at present the 900+ year life spans of pre-Flood individuals seems to many secular scholars to be prima facie evidence that the early chapters of Genesis, including the accounts of Creation and the Flood, are simply mythological.

Third, superlongevity is of considerable significance to eschatology (see, for example, Isaiah 65:20).

And last but not least, pre-Flood superlongevity is of great importance to Biblical chronology itself. Notice, for example, that pre-Flood Biblical chronology depends entirely upon the age at which certain individuals fathered sons (Genesis 5), and that five of the nine ages recorded before the time of Noah—numbers which are critical to pre-Flood Biblical chronology—are in excess of 100 years.

These five instances give ages of the father at the birth of the son as 130, 105, 162, 187, and 182 years. Clearly, pre-Flood Biblical chronology is dependent upon the historical reality of pre-Flood superlongevity.

Thus, the present topic is not only a spin-off from Biblical chronology research, it is also, in one sense, foundational to a significant segment of Biblical chronology.

Why were life spans so much greater before Noah's Flood than they are today? And what might be done to bring about greater life spans at present?

In the introductory article in this series I advanced the following ten statements in relation to these questions:²

1. Christians have always regarded death as an enemy. They have always done whatever they could to find cures for diseases and remedies for other causes of death.
2. Our attitude toward death by 'old age' should be no different. A remedy for 'old age' is by far the #1 medical need today.
3. Modern science and medicine have made great progress in keeping people alive until they reach 'old age', but have been unable to find any way of delaying the onset of 'old age'.
4. Superlongevity (i.e., average life spans in excess of 75 years by decades or more) presently appears impossible to many scientists active in life span research.
5. The Bible contains life span data which show unequivocally that people once lived very

¹Gerald E. Aardsma, "The Cause of Reduced Post-Flood Life Spans – Part I" *The Biblical Chronologist* 7.2 (March/April 2001): 1–6.

²Gerald E. Aardsma, "The Cause of Reduced Post-Flood Life Spans – Part I" *The Biblical Chronologist* 7.2 (March/April 2001): 1–6.

Table 1: Selected Biblical life span data.

name	born (B.C.)	age at death	Scripture reference
Adam	5176	930	Gen 5:5
Seth	5046	912	Gen 5:8
Enosh	4941	905	Gen 5:11
Kenan	4851	910	Gen 5:14
Mahalalel	4781	895	Gen 5:17
Jared	4716	962	Gen 5:20
Methuselah	4489	969	Gen 5:27
Noah	4120	950	Gen 9:29
Shem	3617	600	Gen 11:10–11
Arpachshad	3517	438	Gen 11:12–13
Shelah	3482	433	Gen 11:14–15
Eber	3452	464	Gen 11:16–17
Peleg	3418	239	Gen 11:18–19
Reu	3388	239	Gen 11:20–21
Serug	3356	230	Gen 11:22–23
Terah	3297	205	Gen 11:32
Abraham	3167	175	Gen 25:7
Isaac	3067	180	Gen 35:28
Jacob	3007	147	Gen 47:28
Joseph	2916	110	Gen 50:22
general	2450	75	Psalms 90:10
David	1051	70	2 Sam 5:4

much longer than they do today—that super-longevity is possible (Table 1).

6. These Biblical data show that life spans began to reduce dramatically following the life of Noah.
7. These Biblical data also show that the current state of affairs—with everybody dying within a few decades of 75 years—is not normal or intrinsic for humans.
8. It is wrong to suppose that people die of ‘old age’ today. The Biblical life span data show us that 75 is not an old age for humans.
9. The real reason people die within a few decades of 75 today must be regarded as disease, not ‘old age’. I have temporarily dubbed this disease “Malady \bar{X} ” (read “Malady X-bar”).
10. Elucidating the nature and cause of this disease is an extremely difficult problem. The

Biblical life span data offer the only glimmer of hope of doing so.

If these ten statements are valid, as I believe them to be, then it is clear that the Biblical life span data are a resource of inestimable value. They: 1. teach us the true nature of ‘aging’, 2. present the possibility of elucidating the cause of the ‘aging’ phenomenon, and thereby 3. give hope of finding a cure for “Malady \bar{X} ”, the ‘aging’ disease.

In the present study these Biblical life span data are everything. Understanding why they show the behavior they do through the millennia is the goal. It is not sufficient to simply observe *that* life spans were longer in the past. The purpose of the present study is to attempt to discover *why* they were longer—what physical, material agent(s) caused human life spans to shorten. Our hope is that discovery of *why* life spans were longer in the past will enable us to take practical steps to extend human life spans once again.

The Data

The Biblical data of interest to the present study are shown in Table 1. The dates of birth displayed in this table are computed from a combination of both Biblical and extra-Biblical chronological data according to the principles of the modern discipline of Biblical chronology. The ages at death are taken from the Bible, from the verses shown in the “Scripture reference” column.

This is not an exhaustive list of Biblical life span data. For example, Biblical individuals with anomalously low life spans, such as Enoch [who was raptured] (Genesis 5:24), Lamech [who appears to have died in the Flood] (Genesis 5:31), and Nahor (Genesis 11:24–25) have been excluded from it. Also, no attempt has been made to add names to the list after 1051 B.C., when David was born, because such data are of limited interest in the present study. They show mainly a continuation of the 75-year average life span which, on the basis of Psalm 90 (“A Prayer of Moses the man of God”) was already operative when Moses lived.

The data of Table 1 are plotted in several ways in Figure 1. In the “Bible: periods/events” column, birth dates are shown for the individuals given in the “name” column of the table. In the “Bible: life

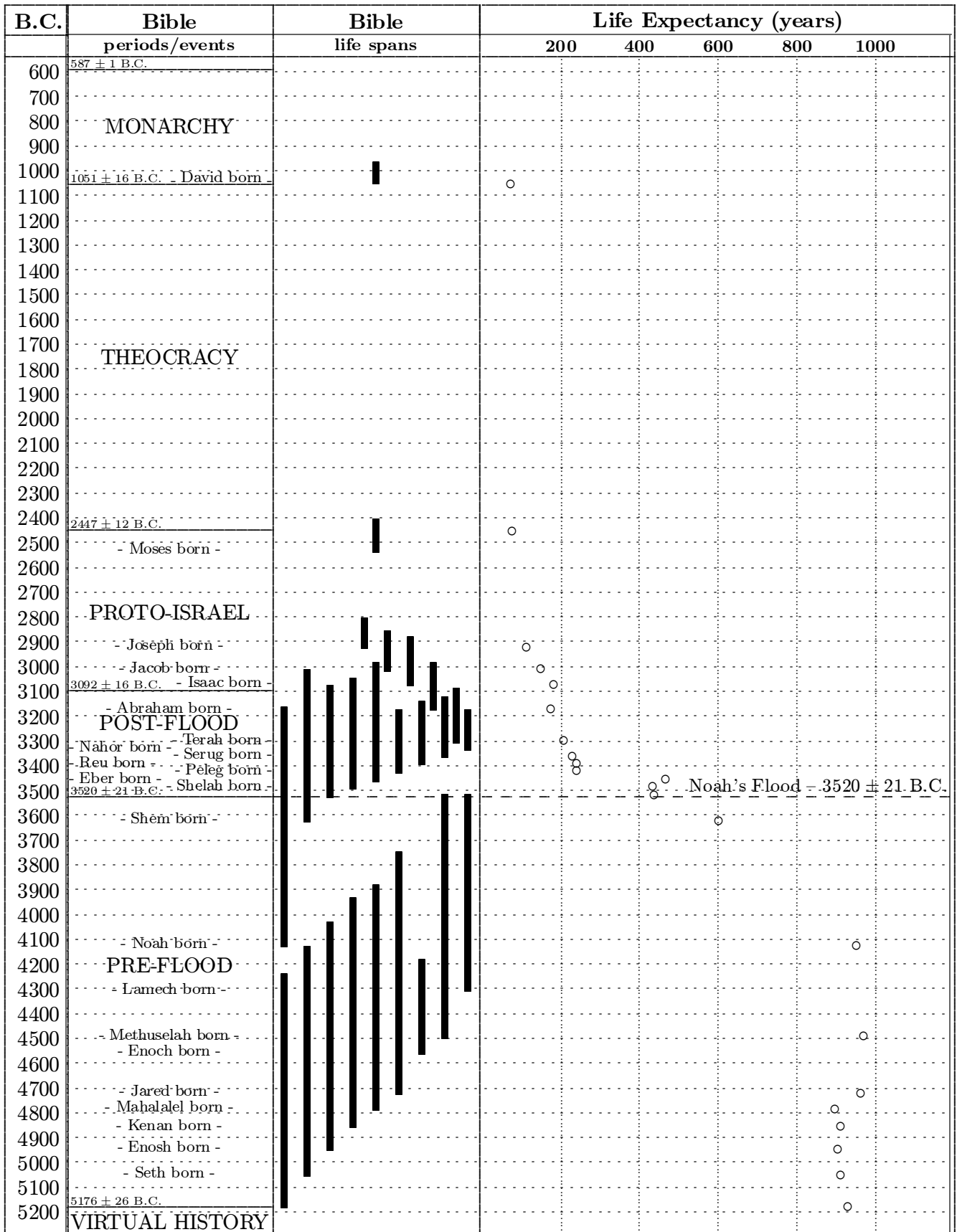


Figure 1: Biblical life span data. The birth date of individuals whose life spans are plotted as solid vertical bars in column 2 are shown in column 1.

spans” column the life spans of these individuals are represented by vertical black bars.

If we assume that each of the individuals shown in the table died of Malady \bar{X} , then we can use their ages at death as an estimate of the Malady \bar{X} -specific life expectancy when they were born. The data of Table 1 are plotted in the rightmost column of Figure 1 using this assumption. For example, the open circle near the top of the figure shows that people could expect to live roughly 70 years on average before dying of Malady \bar{X} back at the time of David. Finding the best possible quantitative (mathematical) explanation of these life expectancy data will be the primary focus of the present series of articles.

Our Advantage

Before I begin to discuss the data displayed in Figure 1 it seems appropriate to point out the unique advantage we have at this time as we attempt to tackle the millennia-old problem of why human life spans were much greater in antiquity than they are today.

Our first advantage lies in our ability even to construct the time chart shown in Figure 1. This time chart—the entire basis of the present study—could not be constructed even a decade ago.

To construct this chart, one has to have their Biblical chronology right all the way back to Adam. Most importantly, one has to have the date of the Flood right. The key to these prerequisites is the recognition that traditional Biblical chronology has dropped out a full millennium in 1 Kings 6:1.³ This discovery was only made in 1990. Extension of the new Biblical chronology back to Creation was only completed in 1999.⁴ Thus, though the Biblical life span data we are concerned with in this study are of great antiquity, our ability to place them accurately on a time chart, as shown in Figure 1, is only two years old.

In addition to having the Biblical chronology right, we enjoy a second important advantage. Figure 1 shows plainly that Noah’s Flood is the di-

viding line between the short life span regime of the present day and the long life span regime of the ancient past. (The reduced life expectancy datum point corresponding to Shem, just before the Flood, may seem an exception to this, but Shem’s reduced life span results from the fact that he lived most of his life in the post-Flood period.) This observation implicates Noah’s Flood as the fundamental *cause* of reduced life spans today. Noah’s Flood appears to have done something which shortened human life spans from that time on. What exactly did it do? This is the fundamental question which must be answered as we seek to solve the cause of Malady \bar{X} . Clearly, to have any hope of answering this question we must have an accurate idea of the nature of the Flood. The significance of an accurate knowledge of the nature of the Flood to cracking the longevity mystery will become increasingly apparent as we proceed in this study. For now the point to notice is that the true nature of the Flood was only discovered in 1997.⁵

Thus, both of the ingredients needed to make quantitative, scientific sense of the Biblical life span data—a correct Biblical chronology, and a correct understanding of the nature of the Flood—have only become available in the past five years. There is no guarantee, of course, that we will be able to solve this most ancient mystery even given these present unique advantages. But we would surely be foolish and deluded if, aware of these advantages, we did not make best use of them, exerting ourselves strenuously to find the cure for Malady \bar{X} .

Strategy

Now I need to say a word about the strategy I have followed in my research into this longevity problem.

The present work breaks with other contemporary scientific research on life spans in its attitude toward the Biblical life span data. These data are commonly held to be mythological by contemporary researchers. The attitude toward these data underlying the present work is opposite to this. I hold these data to be valid, accurate, historical observations of actual life spans of real individuals.

³Gerald E. Aardsma, *A New Approach to the Chronology of Biblical History from Abraham to Samuel*, 2nd ed. (Loda IL: Aardsma Research and Publishing, 1993).

⁴Gerald E. Aardsma, “A Unification of Pre-Flood Chronology,” *The Biblical Chronologist* 5.2 (March/April 1999): 1–18.

⁵Gerald E. Aardsma, “The Cause of Noah’s Flood,” *The Biblical Chronologist* 3.5 (September/October 1997): 1–14.

This attitude is neither arbitrary nor religiously biased. The idea that these data are mythological or concocted in any other way cannot be retained by any scientist who has actually worked with them. These Biblical data display certain features which are impossible to explain in any other way than that they are valid historical observations. This property will become increasingly clear as we proceed through this study. For now I simply point out that the basically historical nature of these life span data is already strongly suggested by their intimate association with key Biblical chronological data. The Biblical chronological data, which nearly every issue of *The Biblical Chronologist* has shown display quantitative historical accuracy back to the time of Adam, cannot reasonably be supposed mythological by an informed mind.

Once the Biblical life span data are accepted as historical and reliable, they automatically become the focus of our research interest. They do so because they report on a unique real-life, natural ‘experiment’ which displays a pronounced life span effect in humans. This is the *only* experimental evidence we have that human life spans can be altered. It is essentially certain that this ‘experiment’ will never be repeated, both because it covers many generations over thousands of years, and because deliberate scientific experimentation of this sort on humans would be blatantly unethical. Thus, these data are not only the only experimental data we presently have which shows anything of interest regarding human longevity, they are almost certainly the only experimental data of the sort on humans we will ever have.

Furthermore, experimental data displaying *any* evidence for extension of the present human life span is obviously of extreme interest. But the Biblical data go far beyond this, giving clear evidence of over a factor of *ten* increase in life spans.

Simply stated, the Biblical life span data record a very pronounced life span alteration ‘signal’ in humans. No other data anywhere records any life span alteration ‘signal’ in humans at all. Obviously, the Biblical data make easy claim to our entire attention.

The basic strategy I have used in regard to the Biblical data is the one which is normal

to science.⁶ This involves formulation of hypotheses [“unjustified (and unjustifiable) anticipations... *conjectures*”⁷] and then subjection of these hypotheses to critical tests [“attempted *refutations*”⁸].

Every effort has been made to make the hypotheses quantitative so they can be tested against the Biblical life expectancy data. That is, the hypotheses have been reduced to simple mathematical equations as much as possible, and the graph of these equations has then been compared to the Biblical life expectancy data to see how well they fit the data. A poor fit indicates that one or more of the hypotheses are wrong and calls for a different hypothesis or set of hypotheses. A good fit means the hypotheses (the guesses) behind the equations may be right. In that case it is appropriate and necessary to carry the investigation further with laboratory tests. The ultimate laboratory test involves an attempt to lengthen the life span of some animal species.

The goal—the “aim”⁹—in all of this is to discover the factor(s) responsible for the marked reduction in human life spans following the Flood. Simply stated, we are searching for the *cause* of reduced post-Flood life spans. Our hope is that discovery of the cause will enable us to prescribe a cure, putting an end to the unnaturally early onset of Malady \bar{X} under which the whole world presently suffers.

Warm-ups

In future articles in this series I plan to spell out the hypotheses which I have found to be most successful in explaining the Biblical data to the present time. In conclusion of the present article I would like to attempt to illustrate some of the power of the Biblical life expectancy data of Fig-

⁶See, for example, the preface to the first edition of Karl Popper’s *Conjectures and Refutations: The Growth of Scientific Knowledge* for a succinct statement of this method.

⁷Karl Popper *Conjectures and Refutations: The Growth of Scientific Knowledge*, 5th edition (New York: Routledge, 1989), vii.

⁸Karl Popper *Conjectures and Refutations: The Growth of Scientific Knowledge*, 5th edition (New York: Routledge, 1989), vii.

⁹Karl Popper *Conjectures and Refutations: The Growth of Scientific Knowledge*, 5th edition (New York: Routledge, 1989), ix.

ure 1 by evaluating several hypotheses of ‘aging’ relative to it.

Supernatural

Perhaps the simplest theory of ‘aging’ would be that the human life span is fixed by God in ways that cannot be understood or ascertained by mankind. This denies any natural cause of ‘aging’, which immediately yields the corollary that scientific investigation into the matter is useless.

The Biblical life expectancy data argue strongly against this theory. They show that human life spans declined in a fairly smooth way from 925 years to 75 years following the Flood. This smooth decline lasted for roughly 1000 years. If the human life span is fixed by God, then these data require that God performed numerous miracles, continuously readjusting human life spans for 1000 years following the Flood. This seems severely contrary to what we learn of the nature of God’s supernatural activity elsewhere in the Bible. Based on the miracles we read about in the Bible, such as the conversion of water into wine,¹⁰ or the calming of the sea,¹¹ or the iron axe head which was made to float on water,¹² we expect miracles to be generally evidenced as point-in-time suspensions of the natural order, not as innumerable slight adjustments of the natural order.

Meanwhile, we expect natural processes to change smoothly with time. For example, the temperature of a bowl of soup naturally changes in a smooth progression from hot to cold with time (Figure 2).

Furthermore, the soup’s change in temperature is more rapid at first, and slows as it nears room temperature. This property is seen in the Biblical life span data as well; the rate of change of life spans is rapid immediately following the Flood, and slows as the present value of 75 years is approached.

The Biblical life span data reveal that life spans declined in a natural way following the Flood, implying that some natural cause was responsible for this decline.

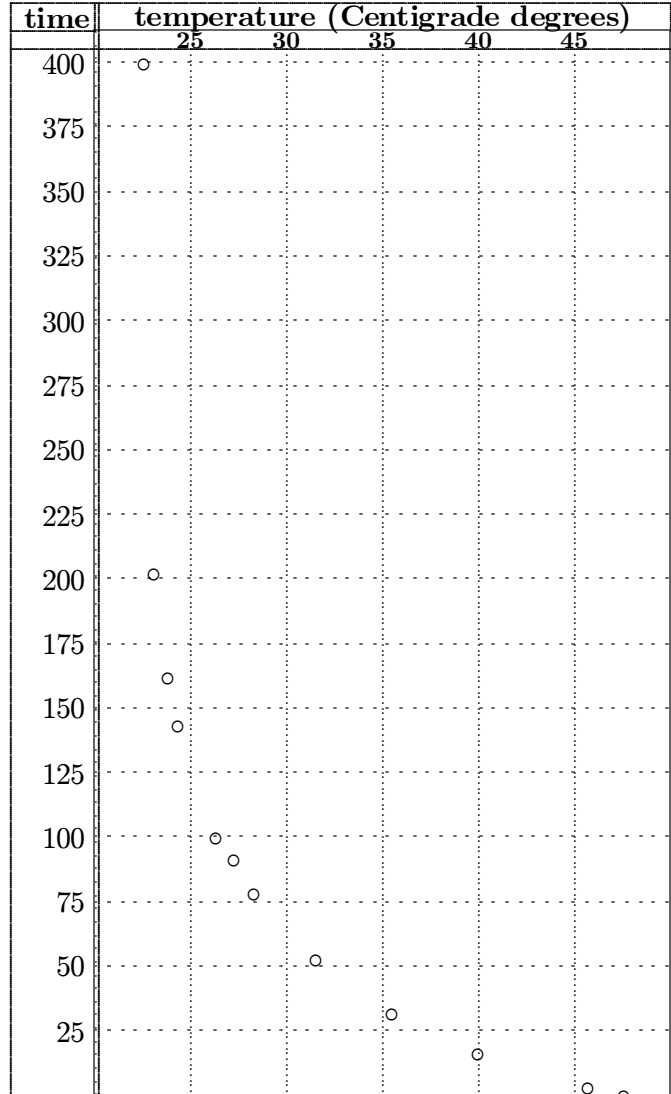


Figure 2: Measured temperature versus time (in minutes) for a bowl of hot water cooling to room temperature.

Vapor Canopy

A second theory, often heard in one form or another in conservative Christian circles, is that pre-Flood longevity was due to a water vapor canopy which enveloped the earth prior to the Flood. This canopy was supposedly suspended above the atmosphere before the Flood, but condensed and fell to the earth at the time of the Flood, thereby contributing to the forty days and nights of rain. (I have never seen an explanation of how such a canopy of water vapor would be kept in place and doubt that one can be found. Most difficult to understand is what would keep the water molecules from mixing with the rest of the atmosphere. I

¹⁰John 2:1-11.
¹¹Luke 8:22-25.
¹²2 Kings 6:1-7.

know of no way to accomplish such a thing. Notice that the atmosphere today does a very good job of mixing all of its constituents together—we do not find separate layers of oxygen, nitrogen, carbon dioxide, water vapor, or any other gas.)

We now know that the Flood was caused by a cosmic projectile impact, and that the energy release due to this impact was more than sufficient to give rise to forty days and nights of rain through simple evaporation of ocean water near the impact site alone.¹³ This renders any contribution of water from a pre-Flood vapor canopy both unnecessary and insignificant. Given the numerous other serious scientific problems a vapor canopy introduces, such as greenhouse heating of the surface of the earth, inordinate heating of the atmosphere at the time of the Flood due to the heat of condensation of water vapor and the conversion of gravitational potential energy to heat energy which would result from collapse of such a canopy, and the problem of maintaining such a canopy for thousands of years in the pre-Flood period, mentioned above, there seems little if any sound scientific justification for continued adherence to the idea of such a canopy.

The canopy is credited by its adherents with prolonging life prior to the Flood usually in one of two ways. The first is through attenuation of hypothetically harmful radiation from space. (Some versions of the theory site UV from the sun, others site cosmic radiation.) The second is through enhanced atmospheric pressure due to the weight of the vapor canopy on the atmosphere.

Both of these versions of the canopy/longevity theory are immediately falsified by the Biblical life span data. To see this, notice that any attenuation of harmful radiation would immediately cease upon collapse of the canopy at the time of the Flood. Similarly, atmospheric pressure would change suddenly and completely upon condensation of the canopy at the time of the Flood. Thus human life spans should have changed to their post-Flood value suddenly and completely at the time of the Flood if these canopy/longevity theories are valid. But the Biblical data show us that life spans did not change suddenly and completely

at the time of the Flood. Rather, they took about 1000 years to complete their change from the pre-Flood value of 925 years to the present value of 75 years. Canopy/longevity theories may be safely discarded.

Evolution

A broad spectrum of theories about ‘aging’ falls under the general umbrella of ‘evolutionary’. The central idea in these theories is that ‘aging’ is a by-product of evolution.

One ‘evolutionary’/‘aging’ theory suggests, for example, that all evolution needs is propagation of the species, and once this function has been fulfilled an organism is best gotten rid of so it doesn’t use up valuable resources. Thus, evolution has arranged for organisms to be discarded once their reproductive task has been completed.

Leaving aside the abuses of logic and language inherent in this specific ‘evolutionary’/‘aging’ theory, notice that the entire category of ‘evolutionary’ theories is falsified by the Biblical life span data. The idea that a species’ longevity is somehow determined by its evolutionary history—specifically, that humans live to 75 years on average because they have been somehow programmed by evolution to do so—cannot be true because we know that humans lived to 925 years on average only a few thousand years ago. Evidently, what we call “aging” today has nothing really to do with evolution at all. The Biblical data, in fact, immediately falsify all theories of human longevity which hold death within a few decades of 75 years to be a pre-programmed biological necessity.

Conclusion

Very many theories have been advanced regarding why humans ‘age’ and die the way we do. Alex Comfort lists several dozen different theories in his book, *The Biology of Senescence*.¹⁴ The Biblical life span data point in a totally new direction however—an exciting direction I am looking forward to exploring with you in future issues of *The Biblical Chronologist*. ◇

¹³Gerald E. Aardsma, “Space Rock Impacts and Noah’s Flood,” *The Biblical Chronologist* 4.2 (March/April 1998): 1–11.

¹⁴Alex Comfort, *The Biology of Senescence*, 3rd edition (New York: Elsevier, 1979), 7–16.

Readers Write

Mt. Sinai and the Burning Bush

Dear Dr. Aardsma,

I read with great interest your report on Mt. Yeroham [Gerald E. Aardsma, "Report on the Excursion to Mt. Yeroham – Part I" *The Biblical Chronologist* 6.5 (September/October 2000): 1–13]. One particular comment stood out that caught my attention. On page ten you listed three of the types of bushes on the mountain. The photographs showed them rather puny in size. As I reviewed the photos of the mountain there are no large plants to be seen.

A couple of years ago my pastor pointed out Acts 7:30, 35 (NASB). Stephen said God appeared in a *thorn bush*. (Perhaps a type? Our Lord wore a crown of thorns.) I did some checking on this at the library. Here is what I found.

- Acts 7:30, 35 use the word *batos* – a briar bush or thorn bush. Compare Mark 12:26, Luke 6:44, and Luke 20:37 where *batos* is also used.
- The Septuagint of Exodus 3:2–4 uses the word *batos*.
- The Hebrew of Exodus 3:2–4 uses the word *sen - eh'*, which means bush, thorn bush, or blackberry bush.

It is clear from both languages that some type of bush with thorns is intended.

As to size, I don't know how large God is when He reveals Himself. If normal human size, it would require plants larger than those shown in the photos on page ten. Did you investigate the plants down by the reservoir? Pictures on page 4 (#8 and #9) taken near the dam show larger plants and trees.

Karl Wiensz
Rickreall, OR

Dear Karl,

I much appreciated your thoughts and Bible research regarding the burning bush. I wish I had noticed the probable association of thorns with this bush before we went; I would then have taken more care to notice whether the bushes we encountered had thorns. I can report that all of them were in

the category of prickly bushes; they did not invite touching. This property seems to be characteristic of much desert vegetation.

Regarding size: Exodus 3:2 seems to allow the possibility that the angel of the Lord appeared in large flames which came up out of a smaller bush. So perhaps the bush does not need to be large in any event.

I didn't investigate the trees and shrubs by the reservoir because many of them were obviously imported, and I was unable to tell which might be native. (Recall that the reservoir had been part of a public park for some years.) However it is the case that the wadis tended to sport larger bushes. Some good examples of large native bushes were surveyed by us down in the wadi bed in the erosional crater behind the summit of Sinai. Examples are shown in *The Biblical Chronologist* Volume 7, Number 1; see especially Figure 14.

Gerald E. Aardsma, Ph.D.
Loda, IL

The Biblical Chronologist is a bimonthly subscription newsletter about Biblical chronology. It is written and edited by Gerald E. Aardsma, a Ph.D. scientist (nuclear physics) with special background in radioisotopic dating methods such as radiocarbon. *The Biblical Chronologist* has a threefold purpose:

1. to encourage, enrich, and strengthen the faith of conservative Christians through instruction in Biblical chronology,
2. to foster informed, up-to-date, scholarly research in this vital field within the conservative Christian community, and
3. to communicate current developments and discoveries in Biblical chronology in an easily understood manner.

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