
## Did Noah Live to 950 Years Old?

There is growing scientific evidence that the human genome is rapidly degenerating due to mutation accumulation (the term "genome" means all of a person's genes combined). The book entitled "Genetic Entropy", by Dr. J.C. Sanford, summarizes the diverse scientific evidences indicating long-term human genetic degeneration. This is supported by papers by several world-famous population geneticists such as Crow (1997), and Lynch (2010). It is also supported by genetic theory, numerical simulation experiments, and numerous other scientific publications (Sanford et al., 2007, 2008, 2010, 2012, 2013; Gibson et al. 2013; Brewer et al., 2013; Baumgardner et al., 2013).

The fact that humanity is genetically degenerating due to mutation accumulation amounts to "evolution going backwards", and is the anti-thesis of Darwinian thought. Remarkably, such degeneration is very consistent with the Bible. In many places, the Bible indicates that we are dying people in a dying world, and that creation itself is wearing out (Figure 1) (Psa 39:5&11; Psa 102:25-26; Mat 24:35; Ro 8:22; Heb 1:10-12; 1Pe 1:24-25).

The most obvious outward evidences for genetic degeneration are aging, death, and shortened average lifespans. The degeneration of man is explicitly recorded in the words of Jacob, who said to the Pharaoh **"I have traveled this earth for 130 hard years. But my life has been short compared to the lives of my ancestors"** (Genesis 47:9, NLT). The extreme longevity of the early patriarchs is very well documented in Genesis, Exodus, Numbers, Deuteronomy, and Joshua. The Bible records the age at death of the first 25 Patriarchs in the lineage that goes from Adam to Moses. All of these early Patriarchs lived to be extremely old. This was also true of

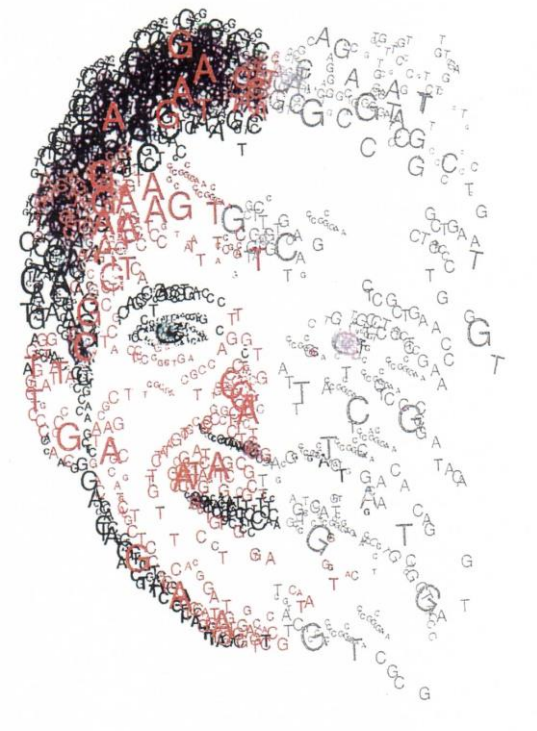

**Figure 1:** Like rust on a car, deleterious (mildly harmful) mutations are slowly but continuously accumulating in the genome of all living creatures resulting in the erosion of genetic information over time. This is one of the tragic consequences of man's sin and the Fall recorded in Genesis chapter 3.

their Biblical contemporaries, such as Ishmael, who lived at the same time. Likewise, we can infer that Cain was extremely long-lived, since he established a city that was populated by his offspring (Gen 4:17). So extreme longevity was not unique to any single family lineage but was probably characteristic of all of humanity at that time.

We do not normally think of the Bible as a source of scientific data. However, the recorded ages of the Patriarchs do in fact constitute real data, which can be analyzed scientifically. Numerous scholars have done this (Holladay and Watt, 2001). We likewise have done this – going a bit further than previous analyses (Table 1). The results are fascinating, and have incredible implications.

**Table 1:** This table is based upon the Masoretic text.

| Patriarch | Father's Age - Begat Son | Biblical Reference | Patriarch's Age at Death | Biblical Reference |
|---|---|---|---|---|
| Adam | N/A | N/A | 930 | Gen 5:5 |
| Seth | 130 | Gen 5:3 | 912 | Gen 5:8 |
| Enos | 105 | Gen 5:6 | 905 | Gen 5:11 |
| Cainan | 90 | Gen 5:9 | 910 | Gen 5:14 |
| Mahalalel | 70 | Gen 5:12 | 895 | Gen 5:17 |
| Jared | 65 | Gen 5:15 | 962 | Gen 5:20 |
| Enoch | 162 | Gen 5:18 | 365 | Gen 5:23 |
| Methuselah | 65 | Gen 5:21 | 969 | Gen 5:27 |
| Lamech | 187 | Gen 5:25 | 777 | Gen 5:31 |
| Noah | 182 | Gen 5:28 | 950 | Gen 9:29 |
| Shem | 502 | Gen 7:11-11:10 | 600 | Gen 11:10,11 |
| Arphaxad | 100 | Gen 11:10 | 438 | Gen 11:12,13 |
| Salah | 35 | Gen 11:12 | 433 | Gen 11:14,15 |
| Eber | 30 | Gen 11:14 | 464 | Gen 11:16,17 |
| Peleg | 34 | Gen 11:16 | 239 | Gen 11:18,19 |
| Reu | 30 | Gen 11:18 | 239 | Gen 11:20,21 |
| Serug | 32 | Gen 11:20 | 230 | Gen 11:22,23 |
| Nahor | 30 | Gen 11:22 | 148 | Gen 11:24,25 |
| Terah | 29 | Gen 11:24 | 205 | Gen 11:32 |
| Abram | 130 | Gen 11:32-12:4 | 175 | Gen 25:7 |
| Sarah | 140 | Genesis 17:17 | 127 | Gen 23:1 |
| Ishmael | 86 | Gen 16:16 | 137 | Gen 25:17 |
| Isaac | 100 | Gen 21:5 | 180 | Gen 35:28 |
| Jacob | 60 | Gen 25:26 | 147 | Gen 47:28 |
| Joseph | 91 | Gen 47:9,41:46,53 & Gen 45:6 | 110 | Gen 50:26 |
| Levi | --- | Gen 29:32-34 | 137 | Ex 6:16 |
| Kohath | --- | --- | 133 | Ex 6:18 |
| Amram | --- | --- | 137 | Ex 6:20 |
| Aaron | --- | --- | 123 | Num 33:39 |
| Moses | --- | --- | 120 | Deu 34:7 |
| Joshua | --- | --- | 110 | Josh 24:29 |
| David | --- | --- | 70 | II Sam 5:4, 1 Ki 6:1 |
| Roman Average* | --- | N/A | 45 | N/A |

**The average life expectancy during the time of the Roman Empire was 45 years of age (see figure 2 caption).*

If we plot the first 10 generations from Adam to Noah, we see that most of the Patriarchs lived to be over 900 years old. Longevity was stable in that period, and the trend-line is nearly flat (Figure 2). During this part of history, the only exception was Enoch – who was "taken up to heaven without dying" (Gen 5:24; Heb 11:5), when he was still relatively young (365 years old). In modern times, most people are not able (or willing) to believe that people could have ever lived to be so old. Therefore, many Christians simply dismiss these records as mythology. However, the next part of the data is not so easily dismissed…

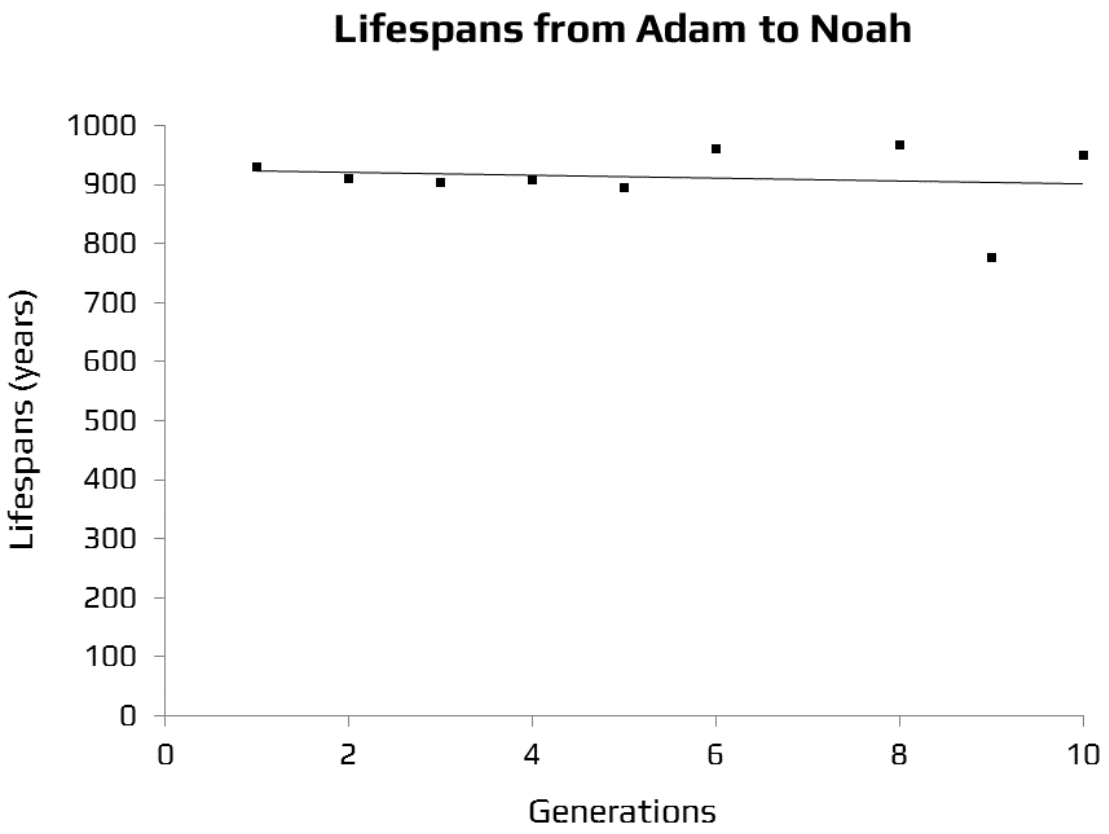


**Figure 2:** The lifespan of first ten generations, from Adam to Noah (excluding Enoch - the 7th generation). Enoch was excluded because he did not die but was translated to heaven at age 365 (Gen 5:24; Heb 11:5). The trend-line is nearly flat showing that life expectancy during this time was nearly stable, with most of these patriarchs living to be over 900 years. This may suggest a very low mutation rate during this period. The actual Patriarchs and their ages are shown in table 1.

If we plot the lifespan of Noah and his descendants, we see an abrupt change during Noah's life, followed by an amazingly systematic decline, continuously going to shorter and shorter lifespans (Figure 3). This decline in lifespan began at the time of the Biblical Flood (see insert in Figure 3). This is seen in all three of the primary translations of the Old Testament. There are some variations in the data, depending on the translation (Masoretic, Septuagint, or Samaritan). However, these differences do not fundamentally change the shape of the downward curve. What does this data tell us?

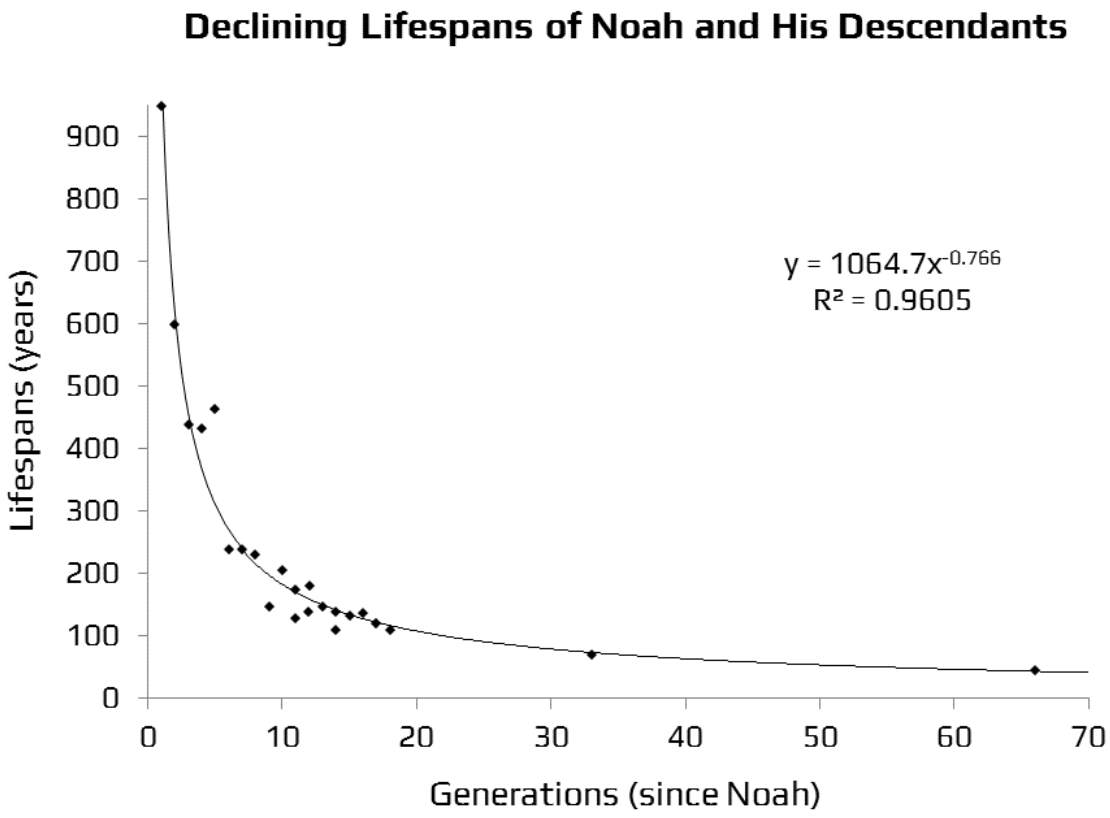


**Figure 3:** The lifespans of Noah and his descendants, based upon the Masoretic text. As can be seen, at the time of the Flood lifespans began to plummet, but in a very systematic way. See table 1 to learn the specific Patriarchs and their ages. The last data point shown is the average life expectancy (45 years) during the time of the Roman Empire (see http://en.wikipedia.org/wiki/Life_expectancy). This statistic excludes childhood deaths before age 10. From Roman times until recent advances in nutrition and medicine, human life expectancy has hovered in this range of 30-50 years (depending on variables such as childhood mortality). Note: The ages at death for Sarah, Ishmael, Levi, and Aaron were included in the scatterplot. However, since these individuals were in the same generation as Abram, Isaac, Joseph, and Moses respectively, they confounded the calculation of the trendline, and so were not included in the trendline calculation.

The plot shown in figure 3 is telling us that the *Biblical data itself is real*. The data is coherent and internally consistent in a way that could never happen by chance. This is in spite of the fact that the data was drawn from various books of the Bible which were written by different authors in different timeframes. Anyone who has studied biological data can see how very "tight" the data is – meaning the data points diverge very little from the trendline. The smooth curve is shaped according to the specific formula shown ($y = 1064.7x^{-.766}$). The $R^2$ statistic given above the plot is called the *coefficient of determination*, which tells us how well the data can be explained by the mathematical formula. The value seen for the Masoretic text ($R^2 = .96$), is extremely high – meaning that the shape of the trendline (the smooth curve) explains 96% of the variation in the lifespan data. Another way to say this is that the lifespans are declining in a very mathematically precise manner. There are only two ways this might have happened, as given below.

The first explanation would be that the mathematical nature of the decline arose because all these data points, scattered in various books of the Old Testament, were fabricated by a sophisticated and

scheming single author. That such an author would need to be a skilled mathematician. Moreover, he or she would need to be driven by the malevolent ambition of deceiving the world into believing that, since the time of Noah, human fitness has been undergoing a very dramatic and very specific exponential decay process.

The second explanation would be that the mathematical nature of the declining lifespans arose because the Biblical accounts are true, and are actually faithfully recording the historical unfolding of some fundamental natural degenerative process.

We rationally must reject the absurd idea that any mathematician could have fabricated so many parts of the Old Testament, just so he could fool the world into believing that this very particular pattern of degeneration happened. If the Old Testament was written to deceive everyone, why would the perpetrator fabricate such hard-to-believe data about people who lived to such great ages? How would that be convincing to anyone? Without the modern ability to analyze this type of data, and without any knowledge of genetic mutations, the decay curve (only seen clearly when the data is plotted), would mean nothing to any of the early readers of the Bible. This forces us to accept the alternative explanation (as remarkable as it may seem), that the reported decline of lifespans arose because it was true, and because all the relevant Biblical accounts were both historically true and accurate. This means that when we read these Biblical accounts, we are reading real histories about real people whose ages at death were actually faithfully recorded. Consistent with this, the Old Testament reads like a sober historical narrative written in an unassuming manner - as if the authors were simply recording history. Given that these early Patriarchs apparently lived to know their great great great great great (etc.)... grandchildren, their old age would have been a matter of great renown – clearly being worthy of being systematically recorded. But in the generations after Moses, age at death was not usually recorded – as would be expected as lifespans approached what we would now call "normal". So it seems the difficulty is not with the Bible, but derives from our own unbelief.

The shape of the downward slope should be immediately recognized by any biologist. It is a biological decay curve. Noah's descendants were undergoing some type of rapid degenerative process. As stated in the introduction, there is now very strong evidence that man is degenerating genetically (and has been for thousands of years), due to continuously accumulating mutations. This makes it very reasonable to conclude that the systematic degeneration of man that is documented in the Bible was due to mutation accumulation and resultant "genetic entropy". Indeed, biologically realistic numerical simulations (see figures 4 and 5), show that given our current mutation rate (about 100 new mutations per person per generation), human fitness and longevity should have historically followed a decay curve very similar to the Biblically-recorded decline in life expectancies. However, the extremely precipitous decline in lifespans recorded in the Bible, just after the Flood (figure 3), is actually significantly steeper than our numerical simulations would have predicted. We have reasons to believe that the Flood was a high-radiation event, and that in the centuries immediately after the Flood, mutation rates may have been substantially higher than present.

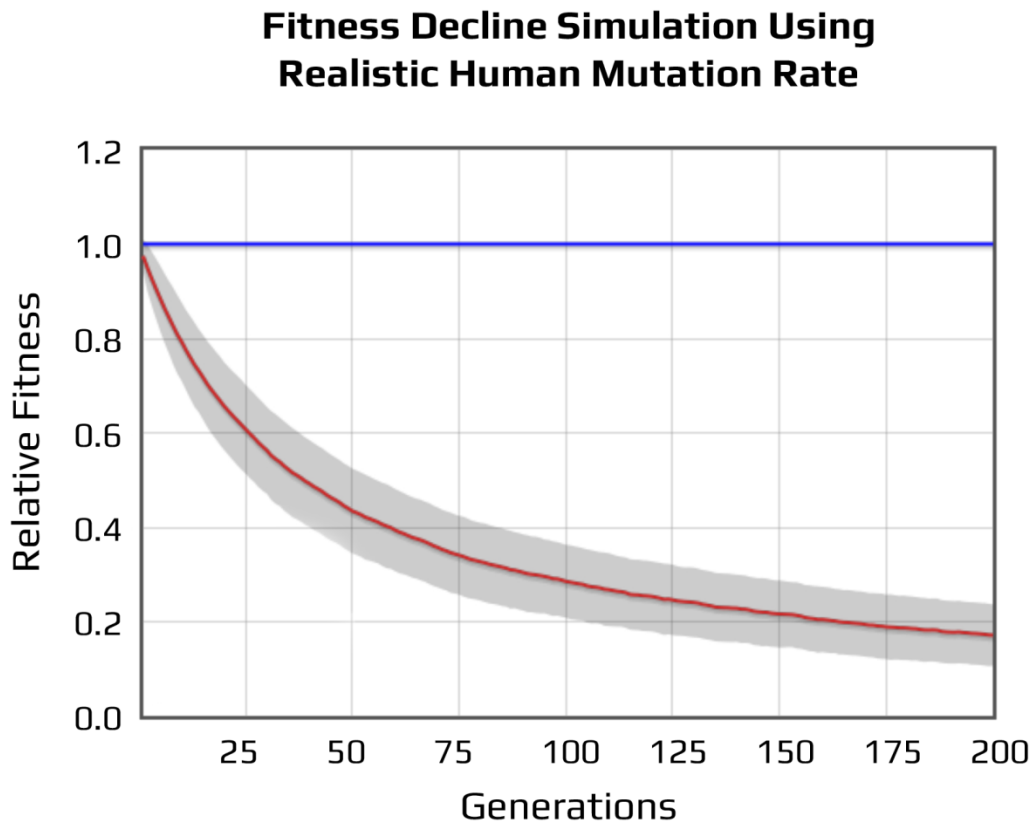


**Figure 4:** Mutation accumulation over 200 generations, within a biologically realistic human population, as simulated using the computer program "Mendel's Accountant". This program is a comprehensive numerical simulation program that tracks deleterious (harmful) mutations as they accumulate in a population - in spite of strong natural selection. As can be seen, mutations accumulate continuously and fitness declines continuously, in spite of the strong purifying natural selection. In this timeframe fitness declined over 80%. The result is a classic biological decay curve – very similar to the decay curve based upon the Biblical longevity data (see figures 2). This simulation employed the known human mutation rate (roughly 100 new mutations per person per generation), with a population size of 10,000. Each generation, natural selection eliminated the "less fit" half of the population's offspring. The blue line represents population size – which in this experiment was held constant from one generation to the next. The shaded region represents the standard deviation (variation) within the population.

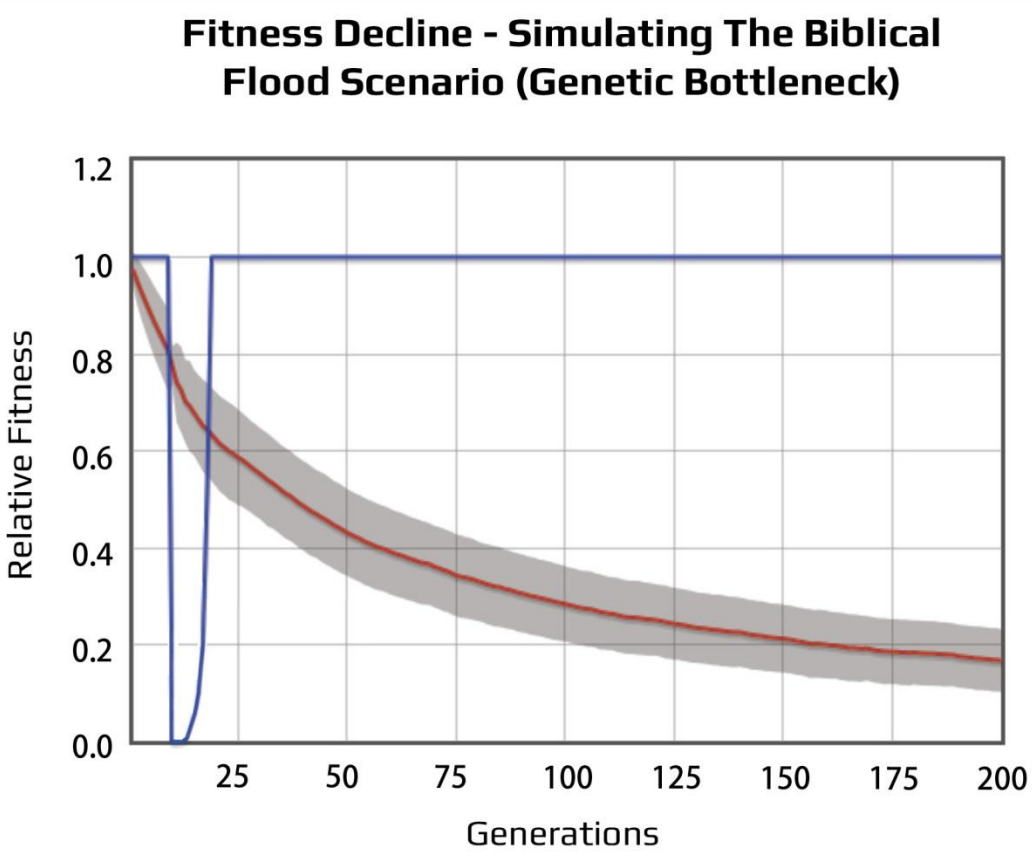


**Figure 5:** Using Mendel's Accountant, an experiment was conducted to simulate the Biblical scenario of mutation accumulation within a Biblical timescale of 200 generations (equivalent to roughly 6,000 years). The parameter settings used in the experiment were specific to the Biblical scenario. Settings included a reproduction rate of 6 offspring per female, a realistic mutation rate of 100 per person per generation, as well as a genetic bottleneck to simulate a drastic reduction in population size down to just 8 people (the family of Noah) preserved on the ark. As with the previous experiment shown in figure 3, fitness decline was continuous over 200 generations as mildly harmful mutations continuously accumulated in the population. However, in the 10$^{th}$ generation there was an extreme "genetic bottleneck" wherein population size (represented by the blue line) went from 10,000 people down to just 8 people in a single generation, followed by a rapid rebound back to the original population size. This did not significantly change the shape of the decay curve (compared to figure 4). Note: In these experiments, we normally employ population sizes that are modest in size, as very large populations are not manageable given our computer resources. However, we get very similar results as with much larger population sizes, as long as we have populations greater than 1000. The shaded region represents the standard deviation (variation) within the population.

## CONCLUSIONS

**Our primary conclusion is that the lifespan data strongly supports the historicity and veracity of the Bible, and in particular, the book of Genesis.** Likewise, the Biblical data strongly indicates that the emerging scientific evidences of genetic degeneration in man are correct, and that genetic entropy is very real. Genetic entropy is the antithesis of evolution and powerfully speaks of the Biblical Fall. All of this points to the desperate need for the redemption of mankind and all creation. More specifically, we can make the following seven logical inferences from our analysis of the Biblical data:

1. As we have said, the lifespan data strongly supports the historicity and veracity of the Bible, and in particular, the book of Genesis.

2. The lifespan data indicate that the extreme longevity of the early Patriarchs was real, and that the rapid decline of longevity after the Flood was real. This supports the Biblical perspective of on-going degeneration since the Fall. In light of recent scientific findings, the documented decline in longevity is best understood in terms of mutation accumulation and genetic entropy.

3. The smooth decline in longevity indicates there are no major "gaps" in the data. So the number of generations from Adam to Jesus, as described in Luke chapter 3, is either correct, or very nearly correct. There is simply no room in the curve for hundreds (or even thousands) of missing generations – as some contend.

4. The drastic decline in longevity began very specifically at the time of the Flood. This strongly supports the reality of a supernatural, cataclysmic world-changing flood, not an ordinary or local flood.

5. Since the genealogies and longevity data are tightly linked, the validation of the longevity data strongly supports the genealogy data (i.e., time from father to son, with no major gaps, etc.), so we can reasonably infer that Adam and Eve lived in the relatively recent past.

6. The declining longevities strongly indicate that evolution is going the wrong way, and that the evolutionary timeline is not viable.

7. Although all three ancient texts of the Old Testament are in general agreement regarding the genealogies, longevity data, and the shape of the exponential decay curve, there are places where the texts differ regarding exact numbers. Our analyses suggest that the Masoretic text appears to be more reliable than either the Septuagint or Samaritan texts. Where either the Septuagint or the Samaritan text differs from the Masoretic text, the other text agrees with the Masoretic text – consistently making the Masoretic text the "consensus text". This strongly suggests that the few transcriptional errors were consistently in one of the other texts, and not in the Masoretic text. Lastly, our analysis supports the Masoretic text in terms of our statistical analysis. When we plotted longevity based upon the Masoretic versus the Septuagint text, we saw that the Coefficient of Determination was higher for the Masoretic data (.96), than the Septuagint data (.93). (The Samaritan text only includes the first five books of the Bible, and its missing lifespan data prevents its inclusion in this comparison).

By Dr. John Sanford, Jim Pamplin & Christopher Rupe

**FURTHER READING**

Genetic Entropy

Biological Information – New Perspectives

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