CREATION DAYS



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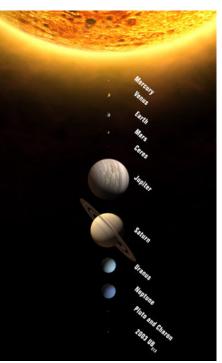
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Day One ,

Genesis 1:1-5

- 1 In the beginning God created the heaven (lofty) and the earth.
- 2 And the earth was without form (waste), and void (empty); and darkness [was] upon the face of the deep. And the Spirit of God moved (was brooding) upon the face of the waters.
- 3 And God said, Let there be light: and there was light.
- 4 And God saw the light, that [it was] good: and God divided the light from the darkness.
- 5 And God called the light Day, and the darkness he called Night. And (there was) the evening (darkness) and (there was) the morning (dawning light) were the first (one) day (time, phase).





The only true and eternal God created our universe and our solar system. Simply put, our marvelous universe was either designed and created or it was an accident! Which is more probable and believable?

The earth was useless since it had no living creatures and the Spirit of God is going to prepare the surface of the earth and install the biosphere of living plants, animals, and man.

Verses 3 and 4 tell us about light. Since light is energy, and energy is governed by the laws of physics, these laws must also have been established on the first day. However, at first light could not penetrate the solar dust and possibly an excessively dense primordial atmosphere to reach the surface of the earth, so He made it possible for light to be on the surface of the earth.

This is the first phase of the creation and the preparing of the surface of the earth with more phases to follow.

The sun contains more than 98% of all the material in our solar system.

Our puny earth is less than 0.1%.

The Incredible Design of the Earth and Our Solar System - Abridged

Introduction

The universe, our galaxy, our Solar System and the Earth-Moon double planet system demonstrate some remarkable evidence of intelligent design. Taken separately, each characteristic is highly improbable by random chance. When taken together, the probability is so small as to be impossible - by random chance. The alternative explanation, design by an intelligent Creator is a more realistic explanation. Either way, one must admit that we are a

product of a miracle - either a miracle of chance or a miracle of design. Let's look at a few of the improbable highlights for the design of the earth and our Solar System.

Unique location in our galaxy - co-rotation radius



Milky Way Galaxy (reconstructed) (NASA/JPL-Caltech)

The Sun and our Solar System have been located in a stable orbit within our galaxy. This orbit lies far from the center of our galaxy and between the spiral arms. The stability of our position is possible because the sun is one of the rare stars that lies within the "galactic corotation radius." Typically, the stars in our galaxy orbit the center of the galaxy at a rate that differs from the rate of the trailing spiral arms. Thus, most stars located between spiral arms do not remain there for long, but would eventually be swept inside a spiral arm. Only at a certain precise distance from the galaxy's center, the "co-rotation radius," can a star remain in its place between two spiral arms, orbiting at precisely the same rate as the galaxy arms rotate around the core (Mishurov, Y.N. and L. A. Zenina. 1999. Yes, the Sun is Located Near the Corotation Circle. Astronomy & Astrophysics 341: 81-85.). Why is it important that we are not in one of the spiral arms? First, our location gives us a view of the universe that is unobstructed by the debris and gases found in the spiral arms. This fact allows us to visualize what the Bible says, "The heavens declare the glory of God." If we were within the spiral arms, our view would be significantly impaired. Second, being outside the spiral arms puts us in a location that is safer than anywhere else in the universe. We are removed from the more densely occupied areas, where stellar interactions can lead to disruption of planetary orbits. In addition, we are farther from the deadly affects of supernovae explosions.

Medvedev, M.V. and A. L. Melott. 2007. Do extragalactic cosmic rays induce cycles in fossil diversity? *Astrophys. J.* 664: 879-889 (arXiv:astro-ph/0602092v3.

Unique stabilization of the inner solar system

A recent study reveals some unusual design in our solar system. With the continuing growth in the capabilities and sophistication of computer systems, scientists are gaining the ability to model the dynamics of the Solar System and ask "what if" questions regarding the presence and size of planets. The presence of Jupiter is required to allow advanced life to exist on the Earth (see below). However, Jupiter's large mass (along with the other gas giants) has a profound destabilizing effect upon the inner planets. In the absence of the Earth-moon system, the orbital period of Jupiter sets up what is called resonance. This resonance causes the orbits of Venus and Mercury to become highly eccentric, so much so, that eventually the orbits become close enough so that there would be a "strong Mercury-Venus encounter." Such an encounter would certainly lead to the ejection of Mercury from the Solar System, and an alteration of the orbit of Venus. In doing the simulations, the scientists learned that the stabilizing effect of the Earth-moon requires a planet with at least the mass of Mars and within 10% of the distance of the Earth from the Sun. The authors of the study used the term "design" twice in the conclusion of their study:

Our basic finding is nevertheless an indication of the need for some sort of rudimentary "design" in the solar system to ensure long-term stability. One possible aspect of such "design" is that long-term stability may require that terrestrial orbits require a degree of irregularity to "stir" certain resonances enough so that such resonances cannot persist. (Innanen, Kimmo, S. Mikkola, and P. Wiegert. 1998. The earth-moon system and the dynamical stability of the inner solar system. *The Astronomical Journal* 116: 2055-2057.)

Unusually circular orbit of the earth

The unique arrangement of large and small planetary bodies in the solar system may be required to ensure the 4+ billion year stability of the system. In addition, it is readily apparent from the cycle of ice ages that the earth is at the edge of the life zone for our star. Although the earth has one of the most stable orbits among all the planets discovered to date, its periodic oscillations, including changes in orbital eccentricity, axial tilt, and a 100,000-year periodic elongation of Earth's orbit, results in a near freeze over (Kerr, R. 1999. Why



the Ice Ages Don't Keep Time. Science 285: 503-505, and Rial, J.A. 1999. Pacemaking the Ice Ages by Frequency Modulation of Earth's Orbital Eccentricity. Science 285: 564-568.). According to Dr. J. E. Chambers, simulations of planetary formation "yield Earth-like planets with large eccentricities (e ~ 0.15)," whereas the Earth has an e value of 0.03. He goes on to say, "Given that climate stability may depend appreciably on e, it could be no coincidence that we inhabit a planet with an unusually circular orbit." (Chambers, J. E. 1998. How Special is Earth's Orbit? American Astronomical Society, DPS meeting #30, #21.07) With this new information, it seems very unlikely that stable planetary systems, in which a small earth-like planet resides in the habitable zone, exist in any other galaxy in our universe. This does not even consider the other design parameters that are required for life to exist anywhere in the universe.

Axial tilt and eccentricity of orbit

The earth is titled on its axis at an angle of 23.5°. This is important, because it accounts for the seasons. Two factors impact the progression of seasons. The most important is the location of land masses on the earth. Nearly all of the continental land mass is located in the Northern Hemisphere. Since land has a higher capacity to absorb the Sun's energy, the earth is much warmer when the Northern Hemisphere is pointing towards the Sun. This happens to be the point at which the earth is farthest from the Sun (the aphelion of its orbit). If the opposite were true, the seasons on the earth would be much more severe (hotter summers and colder winters). For more information, see Aphelion Away! from the NASA website.

The presence of an "impossibly" large moon

The earth has a huge moon orbiting around it, which scientists now know 1) did not bulge off due to the earth's high rotational speed and 2) could not have been captured by the earth's gravity, due to the moon's large mass. For further explanations, see "The scientific legacy of Apollo" (2). The best explanation (other than outright miracle) for the moon's existence is that a Mars-sized planet crashed into the earth around 4.25 billion years ago (the age of the Moon). As you can imagine, the probability of two planets colliding in the same solar system is extremely remote. Any "normal" collision would not have resulted in the formation of the moon, since the ejecta would not have been thrown far enough from the earth to form the moon. The small planet, before it collided with the earth, must have had an unusually elliptical orbit (unlike the orbit of any other planet in the Solar System), which resulted in a virtual head-on collision. The collision of the small planet with the earth would have resulted in the ejection of 5 billion

cubic miles of the earth's crust and mantle into orbit around the earth. This ring of material, the theory states, would have coalesced to form the moon. In addition, the moon is moving away from the earth (currently at 2 inches per year), as it has been since its creation. If we calculate backwards we discover that the moon must have formed just outside the Roche limit, the point at which an object would be torn apart by the earth's gravity (7,300 miles above the earth's surface). A collision which would have ejected material less than the Roche limit would have formed only rings around the earth. Computer models show that a collision of a small planet with the earth must have been very precise in order for any moon to have been formed at all (coincidence or design?). (see What If the Moon Didn't Exist?, by Neil F. Comins, professor of Astronomy and Physics).

Unusually thin atmosphere

Why is the moon important to life on earth? The collision of the small planet with the earth resulted in the ejection of the majority of the earth's primordial atmosphere. If this collision had not occurred, we would have had an atmosphere similar to that of Venus, which is 80 times that of the earth (equivalent to being one mile beneath the ocean). Such a thick atmosphere on Venus resulted in a runaway greenhouse affect, leaving a dry planet with a surface temperature of 800°F. The earth would have suffered a similar fate if the majority of its primordial atmosphere had not been ejected into outer space. In fact, the Earth is 20% more massive than Venus and further away from the Sun, both factors of which should have lead to a terrestrial atmosphere much thicker than that of Venus. For some strange reason, we have a very thin atmosphere - just the right density to maintain the presence of liquid, solid and gaseous water necessary to life (coincidence or design?).

Slowing rotation makes advanced life possible

The moon has had other beneficial affects on the earth. Scientists now know that the earth originally had a rotational period of eight hours. Such a rapid rotational period would have resulted in surface wind velocities in excess of 500 miles per hour. The gravitational tug of the moon over the last 4+ billion years has reduced the rotation period of the earth to 24 hours (likewise, the gravitational attraction of the earth on the moon has reduced its rotational period to 29 days). Needless to say, winds of 500 miles per hour would not be conducive to the existence of higher life forms (coincidence or design?).

Van-Allen radiation shield is unique to Earth

Another fortuitous result of the collision of the Mars-sized planet with the Earth is the presence of the Earth's large and heavy metallic core. In fact, the Earth has the highest density of any of the planets in our Solar System. This large nickel-iron core is responsible for our large magnetic field. This magnetic field produces the Van-Allen radiation shield, which protects the Earth from radiation bombardment. If this shield were not present, life would not be possible on the Earth. The only other rocky planet to have any magnetic field is Mercury - but its field strength is 100 times less than the Earth's. Even Venus, our sister planet, has no magnetic field. The lack of a magnetic field on Venus is thought to have resulted in the planet losing virtually all of its water through stripping by the solar wind (see Venus: Express dispatches from *Nature*). For more information on the magnetosphere, see NASA's What is the Magnetosphere? and Space Weather on Mars. The Van-Allen radiation shield is a design unique to the Earth (coincidence or design?).

Unique continental crust and tectonic activity

Recent evidence tells us that the earth is unique in many ways, even compared to the other rocky planets in our Solar System. In a recent study (3), Dr. Roberta Rudnick says that the

earth has a unique continental crust, which is different from any other planet in our Solar System (even Venus, our "sister planet"). The mechanisms which resulted in this unique continental crust is not entirely certain as she stated, "Perhaps the greatest dilemma facing those interested in understanding how the continents formed is their composition." However, the earth's crust is much thinner (4 km) than that of Venus (30 km). Tectonic processes cannot happen with such thick plates. If most of the crust of the earth had not been blown away during the formation of the moon, the earth would have no continents, but would be completely covered by water (see The Moon And Plate Tectonics: Why We Are Alone from spacedaily.com). The tectonic processes which recycle the crust are extremely important in maintaining life on our planet by recycling minerals and nutrients (coincidence or design?).

All other earth-sized planets will be either deserts or waterworlds

Scientists now know that planets like the earth, with large amounts of both water and land, are virtually impossible to form. Large planets do not form continents because the increased gravity prevents significant mountain and continent formation. Earth-sized planets completely flood, and any land formed is eroded by the seas in a short period of time (in the absence of tectonic activity, which results only from the effects of the formation of the moon). Smaller planets lack tectonic activity, so would have no land masses, but would be completely covered with water. According to Dr. Nick Hoffman of La Trobe University, Melbourne Australia:

"Around countless stars in our galaxy, and innumerable galaxies through space there will surely be Terrestrial planets, yet they will not be Earth-like. They will not have glistening Silver Moons orbiting silently through space around them, but only small dull rocks whizzing in orbit. The worlds will be, almost without exception, waterworlds." (Venus - What the Earth would have been like from spacedaily.com)

Reduction of greenhouse gases with increasing solar luminosity

Another study points out the uniqueness of the earth in maintaining temperatures suitable for life over a period of at least 3.5 billion years. At the formation of the Solar System (about 4.5 billion years ago) the Sun was approximately one third less luminous than it is now (known from studies of stellar burning rates). Scientists have postulated that certain greenhouse gases must have been present at higher concentrations to prevent the earth from becoming a frozen planet. In a recent study ("Atmospheric carbon dioxide concentrations before 2.2 billion years ago" published in December, 1995 in Nature) Drs. Rye, Kuo, and Holland have determined (by sampling ancient rocks) that carbon dioxide levels could not have been high enough to compensate for the lower solar luminosity. The presence of other greenhouse gases, such as ammonia and methane is also problematical, since it is known that the earth possessed an oxidative atmosphere even at four billion years ago (4). In addition, 1) ammonia is extremely sensitive to solar ultraviolet radiation and 2) ammonia at levels needed to influence the earth's temperature would have prevented photosynthetic organisms from fixing nitrogen (i.e., protein, DNA and RNA synthesis would have been prevented). Fossil evidence indicates that photosynthetic organisms have been present on the Earth for at least 3.5 billion years. Methane has similar problems to ammonia, in that it is sensitive to solar ultraviolet radiation in an oxidative atmosphere. The problem remains unresolved, but some unique design must have existed to prevent the Earth from becoming a planet frozen solid in ice (early on) or a sweltering inferno (now) (coincidence or design?).

At least part of the design for the removal of greenhouse gases may have been answered by a recent study. It seems that life itself (and rather remarkable life, at that) may have been responsible for keeping the earth from turning into a scorched planet like Venus. Scientists have discovered a methane metabolizing Archea in the extreme pressures of deep sea

sediments. It is estimated that these bacteria-like organisms consume 300 million tons of methane each year, which prevent the Earth from turning into a furnace. According to Kai-Uwe Hinrichs, a biogeochemist at the Woods Hole Oceanographic Institution in Massachusetts and one of the authors of the study, "If they hadn't been established at some point in Earth's history, we probably wouldn't be here." According to an analysis of the study:

"...on early Earth, these microbes might have been even more significant. Atmospheric scientists have suggested that methane levels in the atmosphere may have been 1000 times higher than they are today, created initially by volcanoes and later by methane-producing microbes (Science, 25 June 1999, p. 2111). At first, this methane may have been beneficial, creating a greenhouse effect that kept the planet from freezing. But if the rise in methane had gone unchecked, Earth might have become too hot for life, as Venus is today." (Zimmer, C. 2001. 'Inconceivable' Bugs Eat Methane on the Ocean Floor. Science 293: 418-419.)

The need for Jupiter-sized planets at 5 AU from its star

We have already discussed the destabilizing effects of large planets in our Solar System. However, these large bodies are required for life to exist on the Earth. A recent study implicates Jupiter as the indirect cause of oceans on the earth. Several studies have concluded that comets brought water to the earth. However, there are problems with this theory. The water on the earth contains 150 ppm deuterium, or heavy hydrogen, which is five or six times the deuterium-to-hydrogen ratio found in the sun and in the solar nebula gas. In addition, it's only about a third of the deuterium-to-hydrogen ratio measured in comets Halley, Hyakutake, and Hale-Bopp. However, the ratio of deuterium-to-hydrogen in meteorites is similar to that seen in the Earth's oceans. Scientists have hypothesized that the presence of Jupiter sent large amounts of water-containing meteorites into the inner Solar System soon after it was forming. It is also possible that Jupiter was also responsible for sending the Mars-sized planet that formed the moon. What is unique is that Jupiter-sized planets are not found as far out as 5 AU in other stellar systems. In fact, nearly all large planets have been found to be closer to their stars than the earth is to the Sun (which would remove all rocky planets in the habitable zone from those systems). For more information, see Only Solar Systems With Jupiters May Harbor Life (from spacedaily.com).

Despite having been responsible for the shower of meteors that pelted the early earth, Jupiter is now our great protector and is responsible for collecting and ejecting a large proportion of the comets that enter into orbit around the Sun (e.g., comet Shoemaker-Levy). Without Jupiter life on Earth at this time would be difficult or impossible due to the large number of cometary collisions (approximately 1,000-10,000 times more collisions) with the Earth (5). There have been many large planets found around other stars recently, but none of these planets are far enough away from their star (most orbit at a position comparable to Mercury) to stabilize the orbits of planets in the zone that can support life or protect these inner planets from cometary bombardment. The presence of Jupiter-like planets in the universe is a rare event. According to Dr. Peter D. Ward of the University of Washington, "All the Jupiters seen today [31 to date] are bad Jupiters. Ours is the only good one we know of. And it's got to be good, or you're thrown out into dark space or into your sun." (See Rare Earth: Why Complex Life is Uncommon in the Universe, click for review). Is this coincidence or design?

Conclusion

The following table ("Uniqueness of the galaxy-sun-earth-moon system for life support") is based upon the assumption that life is based upon carbon. As you are probably aware, there has

been speculation that life might be based upon boron or silicon (mainly in Hollywood productions, such as Star Trek). However, these elements do not form very long-chained compounds, which would make any form of life based upon these elements virtually impossible (6).

Life based upon carbon requires that water exist in the liquid state (a very narrow range of $100^{\circ}C$). For practicality, this range is even more narrow. There are a few bacteria which can exist near the boiling point, but they are very specialized. Nearly all other life forms must exist below a temperature of $50^{\circ}C$. This is the major constraint on the system, which requires stabile galaxies (spirals only) stabile stars (eliminating all large or small stars and all binary systems, which most stars are part of), stabile planetary orbits (orbital eccentricity must be small), exact rotational characteristics (long rotational periods will lead to too widely varying temperatures, short ones to high winds).

The table below lists the parameters required for a planet to be able to sustain life. Individually, the probabilities of occurrence of each parameter are not particularly impressive. The fact that all of these parameters are found on the Earth is extremely impressive, indicating an extreme deviation from random chance. The probability values below are ones obtained from that observed in the universe as a whole.

Uniqueness of the Galaxy-Sun-Earth-Moon System for Life Support

- 1. galaxy size (9) (p = 0.1)
 - if too large: infusion of gas and stars would disturb sun's orbit and ignite deadly galactic eruptions
 - if too small: infusion of gas would be insufficient to sustain star formation long enough for life to form
- 2. galaxy type (7) (p = 0.1)
 - if too elliptical: star formation would cease before sufficient heavy elements formed for life chemistry
 - if too irregular: radiation exposure would be too severe (at times) and life-essential heavy elements would not form
- 3. galaxy location (9) (p = 0.1)
 - if too close to dense galaxy cluster: galaxy would be gravitationally unstable, hence unsuitable for life
 - if too close to large galaxy(ies): same result
- 4. supernovae eruptions (8) (p = 0.01)
 - if too close: radiation would exterminate life
 - if too far: too little "ash" would be available for rocky planets to form
 - if too infrequent: same result
 - if too frequent: radiation would exterminate life
 - if too soon: too little "ash" would be available for rocky planets to form
 - if too late: radiation would exterminate life
- 5. white dwarf binaries (8) (p = 0.01)
 - if too few insufficient fluorine would exist for life chemistry
 - *if too many*: orbits of life-supportable planets would be disrupted; life would be exterminated
 - if too soon: insufficient fluorine would exist for life chemistry
 - if too late: fluorine would arrive too late for life chemistry
- 6. proximity of solar nebula to a supernova eruption (9)
 - if farther: insufficient heavy elements would be attracted for life chemistry

if closer: nebula would be blown apart

- 7. timing of solar nebula formation relative to supernova eruption (9)

 if earlier: nebula would be blown apart

 if later: nebula would not attract enough heavy elements for life chemistry
- 8. parent star distance from center of galaxy (9) (p = 0.2)

 if greater: insufficient heavy elements would be available for rocky planet formation

 if lesser: radiation would be too intense for life; stellar density would disturb planetary
 orbits, making life impossible
- 9. parent star distance from closest spiral arm (9) (p = 0.1)

 if too small: radiation from other stars would be too intense and the stellar density would disturb orbits of life-supportable planets

 if too great: quantity of heavy elements would be insufficient for formation of life-supportable planets

Numbers 10 thru 68 and references deleted to save space!!

Total Probability = 1:10⁹⁹

By putting together probabilities for each of these design features occurring by chance, we can calculate the probability of the existence of a planet like Earth. This probability is 1 chance in 10^{99} . Since there are estimated to be a maximum of 10^{23} planets in the universe (10 planets/star), by chance there shouldn't be any planets capable of supporting life in the universe, only one chance in 10^{76} and anything less than one chance in 10^{50} is considered to be quite impossible!

Design or random chance?

Note: This is most likely a huge over estimate. In a recent survey of globular cluster 47 Tucanae, scientists found zero extrasolar planets out of 37,000 stars searched (Astronomers Ponder Lack of Planets in Globular Cluster from the Hubble Space Telescope).

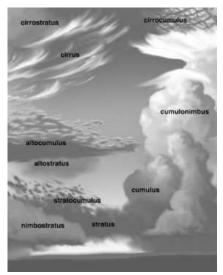
Taken from Big Bang Refined by Fire by Dr. Hugh Ross, 1998. Reasons To Believe, Pasadena, CA.

Day Two

Genesis 1:6-8
6 And God said, Let there be a
firmament (expanse) in the midst of the
waters, and let it divide the waters
from the waters.

7 And God made the firmament (expanse), and divided the waters which [were] under the firmament (expanse) from the waters which [were] above the firmament (expanse): and it was so.

8 And God called the firmament (expanse) Heaven (lofty). And (there was) the evening (darkness) and (there was) the morning (dawning light) were the second day (time, phase).



Life as we know it on earth requires this stable water cycle as the 332,500,000 cubic miles of water that has been provided cycles through the atmosphere as the vapor rises into the air where cooler temperatures cause it to condense into clouds. Air currents move clouds around the globe, cloud particles collide, grow, and fall out of the sky as precipitation.

In verses 6 and 7 God provides a separation between the terrestrial waters and the atmospheric waters thus we have a stable water cycle that provides occasional rains to soak into the around to water the plants and runoff to feed our fresh water rivers, lakes and underground aguifers. Also unfortunately at times the resulting storms can be very destructive. In keeping with the order of things, God had already put in effect everything necessary on day one needed to accomplish day two. In order to separate the waters, water had to be there, which it was. The laws of science also needed to be established which they were. Note this sequence of events during the entire creation.

Adam, Plants and Rain

With Genesis 2:4 the creation narrative changes some what in nature. The first chapter is a sequential period by period account of the creation. The second chapter does not necessarily keep to the time step order and back tracks now and then to review what has already been recorded. We will use the word by word translation as published by J. P. Green in the "The Interlinear Bible".

4) These (are) the generations of the heavens and the earth when they (were) created in the day (#3117) of the making of Jehovah God's earth and heavens.

This introduction uses the Hebrew word most often translated as day (yowm) to indicate the time period of the entire creation and other translations render the phrase "in the day" as "in the time".

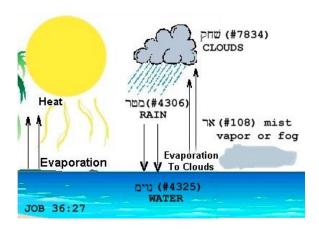
5) And every shrub of the field not yet it was on the earth, and every herb of the field not yet it had sprung up, for not had rain (#4305) sent Jehovah God on the earth, and a man was not to till the ground.

Here we back track some to a time when there was a solid ground but no shrubs and herbs, it had not rained, and man was not around. This would appear to be a time in the day (also translated time, age or aeon) three of chapter one when the land had appeared in the midst of the waters, but the herbs and shrubs were not yet present since there was no rain to irrigate them. Three conditions that the Lord Jehovah was to change in the next four verses. These three changes are the same as occurred in the latter part of day three and day six of chapter one.

6) And a mist (#108) went up from the earth and watered all the face of the ground.

Here the Lord first provides watering up from the ground which indicates that the ground is well soaked since this is the condition necessary for a mist, vapor, or fog to form over the land. The Hebrew word translated as mist can also be translated as fog or vapor as we have indicated and only appears again in Scriptures in Job 36:27 where the hydrologic cycle is described as follows.

Job 36:27) For He draws up the drops of water, they distill rain (#4306) into mist (#108), which drip down the clouds and drop upon men abundantly.



Contrary to the many theories that have been proposed concerning the condition of the hydrological cycle before the flood, there is here no indication that this cycle differs greatly from that of today. The condition of there being no rain is described only in conjunction with the time when plants and man also did not exist. And then the hydrologic cycle is initiated with no indication that it differs significantly from that of today. The Hebrew word for rain does not appear again until Genesis 7:4 when the Lord says;

Gen 7:4) I will cause to rain (#4305) on the earth forty days and forty nights

But, no where between Genesis 2:6 and 7:4 do we have any indication that the hydrologic cycle is any different than that described in Job 36.

7) And formed Jehovah God the man (of) dust from the ground, and blew into his nostrils breath of life; and became the man a soul living.
And planted Jehovah God a garden in Eden, to the east; and put there the man whom He had formed.
And made spring Jehovah God from the ground every tree pleasant to the sight and good for food.

Here the Lord has <u>completed the job</u> and placed on the earth <u>all three parts</u> than were noted as not present in verse 5, <u>rain</u>, <u>plants and man</u>. The chapter goes on and describes the rivers that watered the garden. All four of the rivers of Eden listed in Genesis 2:11-14 can be readily identified, the "Perath, Hiddekel, Gihon and Pishon"

"Perath is simply the Hebrew version of Arabic Firat and Greek Euphrates;

"Hiddekel is Hebrew for Sumerian Idiglat from which the Greek Tigris derives."

Gihon; "... the River Aras, flowing into the Caspian Sea from the mountains north of Lake Urmia, was once called the Gaihun. By checking the writings of the Islamic geographers who accompanied the Arabic invasion of Persia in the 8th century, I was able to confirm that this was indeed the case. Moreover, even as late as the last century, Victorian atlases and encyclopaedias were still naming the river as the Gaihun-Aras. The Gaihun is therefore the missing biblical Gihon."

"Pishon - "Hebrew (West Semitic) name derived from the old Iranian Uizhun, where the Iranian vowel 'U' had been converted into the Semitic labial consonant 'P'. Thus we have Uizhun to Pizhun to Pishon. Strange as it may seem, such switches do occur between the two language groups. For instance, one archaeological site in Iran is known by its Arabic (West Semitic) name of Pisdeli whereas its ancient (Iranian) name was Uishteri. The river Uizhun (the modern Qezel Uzun) - thus identified as the biblical Pishon - flows down from the mountains of Kurdistan and empties into the southern basin of the Caspian Sea."

Conclusion: The more detailed creation account of Genesis 2 differs in form and adds more detail than Genesis 1, but in no way provides any discrepancies. In this chapter there is presented no evidence that the climate and hydrologic cycle differs significantly than that of today. Such possibilities are just not included.

Notes:

Concerning the often discussed vapor canopy theories, recent computer simulations indicate that a thin canopy is theoretically possible and could provide a more even and moderate climate all over the globe. But if the vapor layer is not of optimum characteristics it could either provide too much of a green house effect and extremely high temperatures, or too much vapor and you have a cooling effect of course. However, vapor layers of optimum characteristics for climatic conditions do not hold enough water to provide a significant percentage of the total amount of water to flood the total globe to the depth required by the Genesis account. Therefore, the vapor canopy theories do not seem to provide a totally satisfactory explanation for the flood. There also must be a significant contribution from another source, most likely a celestial source such as a mutli-fragment icy comet shower.

Day Three

Genesis 1:9-13

9 And God said, Let the waters under the heaven be gathered together unto one place, and let the dry [land] appear: and it was so.

10 And God called the dry [land] Earth; and the gathering together of the waters called he Seas: and God saw that [it was] good.

11 And God said, Let the earth bring forth grass, the herb yielding seed, [and] the fruit tree yielding fruit after his kind, whose seed [is] in itself, upon the earth: and it was so.

12 And the earth brought forth grass, [and] herb yielding seed after his kind, and the tree yielding fruit, whose seed [was] in itself, after his kind: and God saw that [it was] good.

13 And (there was) the evening (darkness) and (there was) the morning (dawning light) were the third day (time, phase).











There was at one time a large single land mass which later split into the continents as we have today.

In verses eleven and twelve we see the creation of the first life on earth. Note that the grass, herbs and trees were created bearing seed for species reproduction. Not only were the simplest plant forms created, but also the most complex. They produce oxygen which is required for the animals to breath.

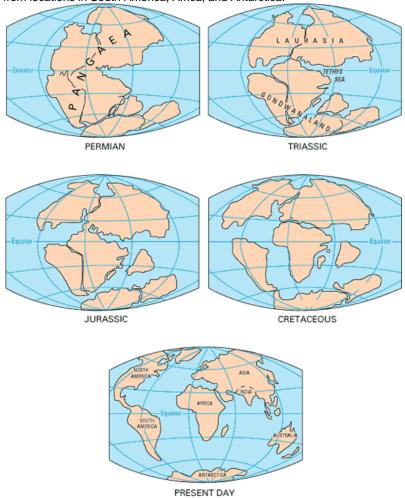
Verses 29 and 30 of Genesis One tell us why plants were created on day three and before the animals. These verses say that the plants were to be food for all the animals and man. Naturally, the plants were in place, ready for the animals to eat upon their creation.

The laws of physics require an extended time period of many years as the emerging dry land drains of water, dries, and then sprouts the many types of plants which then mature into fruit bearing vegetables and fruit trees from which man eats. Also requires the development of the many types of climate zones so that the varied kinds of plants from rain forest species to desert types, from low land valley plants to mountain high plants, from tropical plants to extreme polar plants can sprout and mature. Many species are now extinct which we know about only from their fossil remains.

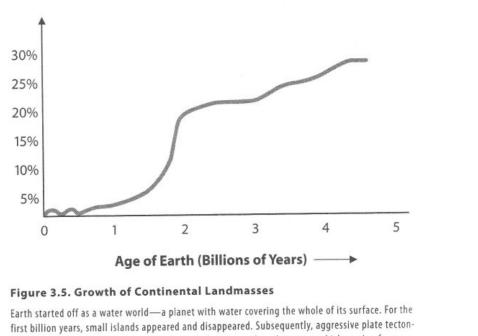
Continent Building and Drift

Widespread distribution of Permo-Carboniferous glacial sediments in South America, Africa, Madagascar, Arabia, India, Antarctica and Australia was one of the major pieces of evidence for the theory of continental drift. The continuity of glaciers, inferred from oriented glacial striations and deposits called tillites, suggested the existence of the supercontinent of Gondwana, which became a central element of the concept of continental drift. Striations indicated glacial flow away from the equator and toward the poles, in modern coordinates, and was a good indicator of the fact that the southern continents had previously been in dramatically different locations, as well as contiguous with each other.

Evidence for continental drift is now considered to be extensive, in the form of plant and animal fossils of the same type found around different continent shores, suggesting that these shores were once joined: the fossils of the freshwater crocodile, found in Brazil and South Africa, are one example. Another is the discovery of fossils of the aquatic reptile Lystrosaurus from rocks of the same type from locations in South America, Africa, and Antarctica.



The dry land appeared over time and then it moved around!



ics caused continents to grow at a significantly faster rate than the rate at which erosion forces wore them down. Today, continents and islands cover 29 percent of the total surface area of Earth.

(Illustration by Jonathan Price)

Four Square Miles of Carboniferous Forest Discovered

Summary: An extensive fossil forest of upright standing extinct plants buried in shale rooted on top of a coal seam at 250 feet depth in central Illinois. The evidence indicates that the mature growing forest was buried when an earthquake dropped a coal forming peat swamp area a few feet allowing flooding from an adjacent river drowning the vegetation and covering it in sediment which eventually became shale on top of the coal seam. No animal fossils are found, only insect parts.



Above ground, showing the flat, central Illinois landscape near the Riola mine, 250 feet above the coal seam. The current landscape is a far cry from the rainforest vegetation of the Carboniferous Era that was found burried below.



This reconstruction, done by Mary Parrish of the Department of Paleobiology, shows a forest dominated by a mixture of lycopsid trees (front right, also with juvenile tree), tree ferns (center front, with "mantles" of prop roots extending out from the trunks), seed ferns (left center, short trees with crown of frond-like leaves), and calamites (right side rear foreground, with branches in whorls). The forest is open and includes many vines and low-growing plants.

These are the remnants of extinct plants from a geological period 300 million years ago, called the Carboniferous, when the world was covered in a riot of green. Illinois was near the equator and much warmer and wetter.

It was also a time before flowering plants had evolved, and so the plants would seem bizarre to modern eyes, said study coauthor Howard Falcon-Lang, a geologist at the University of Bristol in the United Kingdom.

"These are some of the earliest known rainforests to evolve on our planet," he said. "It was like something out of Jules Verne."

Giant tree ferns would have formed a lower canopy 30 feet high. Poking up through the ferns would have been 100-foot-tall clubmosses — asparagus-like poles that sprouted crowns full of spores. It was the age of insects, with 6-foot-long millipedes and dragonflies with yard-long wingspans.

"Imagine these forests alive with chirping and all these creepy crawlers," Falcon-Lang said.

An earthquake preserved all this for posterity. Elrick says it was akin to the 1811-12 earthquakes near New Madrid, Mo., which dropped a block of earth containing the Mississippi River, creating a natural dam that made Reelfoot Lake in Tennessee.

When the ancient earthquake hit, a sudden flooding in the submerged block killed the rainforest. Mud and silt rushed into the depression, preserving the stumps and logs in a layer that eventually became shale.

And that was the state of things until, 300 million years later, miners noticed shiny, funnel-shaped concretions that occasionally fell from the shale layer above them. They called them "kettlebottoms." But they were really fossilized stumps, whose roots fingered the peaty layer that ultimately became the coal seam the miners were working in.

"What's extraordinary about this discovery is that this forest has been preserved in its growth position," said Falcon-Lang. "It's an upright forest with trees still standing upright."

Lead study author Bill DiMichele, a paleobotanist at the Smithsonian Institution, said the lateral extent of the fossils allowed him to notice subtle changes in species diversity as he did surveys. As mining continues, the size of the exposed fossil forest grows by the day.

DiMichele is now doing inventories of ancient plants in two other actively mined Illinois coal seams, the Danville and the Springfield, which sit above and below the Herrin, respectively, and are separated by about a half-million years of geological time. Where most botanists do their work by walking through a forest, DiMichele takes elevators down mine shafts — to get beneath the forest.

"We get to walk under it and look up at it," he said. "It's the earthworm's view."



Fallen trunk section. A section of a large trunk has fallen from the roof and lies in the middle of the floor, to the right of the backpack. In the background, study coauthors John Nelson and Howard Falcon-Lang are examining the roof for plant fossils. The sides of the room are the coal bed.



Neuropteris, part of a frond of a "seed fern", seen on the mine ceiling or roof. The roof is the forest floor of the swampy environment in which these plants were living. Miners removed the coal bed exposing the forest floor "this would be the worm's eye view" (if worms had eyes!). Seed ferns were seed-bearing plants that had large, highly compound leaves much like ferns (hence their descriptive name).



Howard Falcon-Lang and John Nelson are standing on opposite sides of a large, prostrate trunk of a giant lycopsid tree. This monster tree is over 6 feet wide and stretches for over 120 feet, neither the base nor the top can be seen.

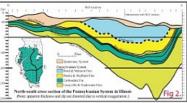


Base of lycopsid tree stump buried while still upright, as seen from underneath. A metal plate keeps the stump from falling and injuring the miners. The trunk projects up into the roof shale. **This stump would have been "rooted" in the very top of the coal bed.**

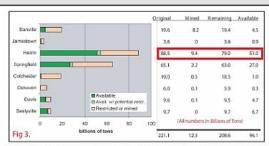


The Herrin Coal underlies about two thirds of Illinois as well as portions of western Indiana and western Kentucky. The coal crops out along the margins of the Illinois Basin and reaches a maximum depth in Illinois of about 1,300 feet. (See Fig 1. and Fig 2.) The Herrin Coal is a normal brightbanded coal. Its lower portion contains a prominent claystone parting (the "blue band") that normally is 1-3 inches thick. It averages more than 6 feet thick in extensive areas and locally reaches 15 feet. It is thin in much of central Illinois but has

been extensively mined in western, west-central, southern, and northern Illinois, as well as in the southern part of the Danville region of eastern Illinois. In some places the coal is cut out by channels filled with the Anvil Rock



Sandstone Member. In parts of Illinois, silty gray shale as much as 100 feet thick overlies the Herrin Coal. Associated with this shale is a channel sandstone commonly as much as a mile wide and 60-80 feet thick mapped as Anvil Rock Sandstone and may be contemporaneous with the coal. In areas where the coal



is overlain by relatively thick bodies of the gray shale of up to a few tens of feet it has a much lower sulfur content than elsewhere. The gray shale overlies the coal principally in parts of Williamson, Franklin, Jefferson, Madison, St. Clair, eastern Macoupin, and S. Vermilion. Generally, however the Herrin Coal is overlain by either the Anna Shale Member (black fissile shale) or the Brereton Limestone Member. (Hopkins, 1968 - B95, See Fig 4.)

The original resource of Herrin Coal in the State of Illinois totals 88.5 billion tons, of which 9.4 billion have been mined. Approximately 58% of the original Herrin Coal resources, 51 billion tons, are considered available for mining. (See Fig 3.) Available means that the surface land-use and geologic conditions re-

lated to mining of the deposit (e.g. thickness, depth, in-place tonnage, stability of bedrock overburden) are comparable to other coals currently being mined in the state. Of these resources, 21 billion tons occur in coal 42 to 66 inches thick and 30 billion tons occur in thicknesses greater than 66 inches. (Modified from ISGS Pub. IM 120, Treworgy, et al)

References:

- Handbook of Illinois 5
- Treworgy, C.G., C.P. K
 Coal for mining in Illing

Day Four

Genesis 1:14-19

14 And God said, Let there be lights in the firmament (expanse) of the heaven to divide the day from the night; and let them be for signs, and for seasons, and for days, and years:

15 And let them be for lights in the firmament (expanse) of the heaven to give light upon the earth: and it was so.

16 And God made (caused to appear) two great lights; the greater light to rule the day, and the lesser light to rule the night: [he made (caused to appear)] the stars also.

17 And God set them in the firmament (expanse) of the heaven to give light upon the earth,

18 And to rule over the day and over the night, and to divide the light from the darkness: and God saw that [it was] good.

19 And (there was) the evening (darkness) and (there was) the morning (dawning light) were the fourth day (time, phase).



Our Galaxy



The sun shines across the earth.



Eclipsed moon rising.

Verses 14 and 15 tell us the purpose of the lights. In addition to lights for day and night, they were created to help us follow time periods and directions. By using the stars we can know when to plant crops and navigate ships. The location of our planet in the galaxy gives us a view of the universe that is unobstructed by the debris and gases found in the spiral arms. Also, being outside the spiral arms puts us in a location that is safer than anywhere else in the universe as we are removed from the more densely occupied areas, where stellar interactions can lead to disruption of planetary orbits. In addition, we are farther from the deadly affects of supernovae explosions.

Verses 16, 17 and 18 refer to the sun (the greater light to rule the day), and the moon (the lesser light to rule the night along with the stars). They were created on day one when the total heavens were created and then the atmosphere was transformed from translucent to occasionally transparent as it is today so that they can often brightly shine upon the surface of the earth.

Most every where in our solar system the sun rules, but from the surface of the earth one experiences day and night and during the night the moon rules as it goes through its phases. At times the moon is visible during the day but at those times it is less apparent and does not rule over the brightness of the sun.

God created the sun, moon and stars on day one or day four?

One of the perplexing mysteries of the Genesis One creation record is that the Sun ("greater light to rule the day") is not mentioned until day four. This has lead many to conclude that the sun was not made/created until after the Earth was created. Let us take a close look at this record.

One wonders, why does it say in verse 1:1 that the heaven/heavens was CREATED (*bara'*) if it is empty ??

"and darkness was upon the face of the deep." ... "And the Spirit of God moved upon the face of the waters."

We take the above verses as our first clue that possibly all the following portions of Genesis One are concerned with what is happening only on the face/surface of the earth! Strong's Hebrew Dictionary tells us that Hebrew word rachaph translated as "moved" is "A primitive root; to brood;" and all who have just a little knowledge of animals knows that the brood hen does much more than just move/hover. She forms and lays the egg, protects and warms it until incubation, and then feeds and protects the chicks until they are mature enough to go it on their own. Therefore, it seems that to translate rachaph as "moved", "hovering", "fluttering" as most translators do is selling short the business of the Spirit of God over the surface.

Now lets take a closer look at the Hebrew word 'asah translated as "made", it has a very broad meaning even as "made" does in the English.





She/He MADE the bed -or- Serta/Sealy MADE the bed ??

6213 'asah aw-saw'

a primitive root; to do or make, in the broadest sense and widest application (as follows):--accomplish, advance, appoint, apt, be at, become, bear, bestow, bring forth, bruise, be busy, X certainly, have the charge of, commit, deal (with), deck, + displease, do, (ready) dress(-ed), (put in) execute(-ion), exercise, fashion, + feast, (fight-)ing man, + finish, fit, fly, follow, fulfill, furnish, gather, get, go about, govern, grant, great, + hinder, hold ((a feast)), X indeed, + be industrious, + journey, keep, labour, maintain, make, be meet, observe, be occupied, offer, + officer, pare, bring (come) to pass, perform, pracise, prepare, procure, provide, put, requite, X sacrifice, serve, set, shew, X sin, spend, X surely, take, X thoroughly, trim, X very, + vex, be (warr-)ior, work(-man), yield, use.

(from http://strongsnumbers.com/hebrew/6213.htm)

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1a2b) to produce
             1a2c) to prepare
           1a2d) to make (an offering)
             1a2e) to attend to, put in order
             1a2f) to observe, celebrate
           1a2g) to acquire (property)
             1a2h) to appoint, ordain, institute
             1a2i) to bring about
           1a2j) to use
           1a2k) to spend, pass
  1b) (Niphal)
      1b1) to be done
      1b2) to be made
      1b3) to be produced
      1b4) to be offered
      1b5) to be observed
      1b6) to be used
  1c) (Pual) to be made
2) (Piel) to press, squeeze
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(from http://bible.crosswalk.com/Lexicons/Hebrew/)

Genesis 1 ≥≥ GOD'S WORD ® Translation

1 In the beginning God created (bara' " ... stresses that what was formed was new and perfect. The word is used throughout the Bible only with God as its subject."(1)) heaven and earth.

NOTE: The water EXISTED from day one!
And the darkness covered the existing water!

2 The earth was formless (*lit. lie waste, desert*) and empty, and darkness covered the deep water. The Spirit of God was hovering (*brooding*) over the water. 3 Then God said, "Let there be light!" So there was light. 4 God saw the light was good. So God separated the light from the darkness. 5 God named the light day, and the darkness he named night. There was evening, then morning-the first day.

On day two a separation is placed in the EXISTING waters !!

6 Then God said, "Let there be a horizon in the middle of the water in order to separate the water." 7 So God made the horizon and separated the water above and below the horizon. And so it was. 8 God named what was above the horizon sky. There was evening, then morning-a second day.

On day three the EXISTING waters under the sky are gathered together !!

9 Then God said, "Let the water under the sky come together in one area, and let the dry land appear." And so it was. 10 God named the dry land earth. The water which came together he named sea. God saw that it was good. 11 Then God said, "Let the earth produce vegetation: plants bearing seeds, each according to its own type, and fruit trees bearing fruit with seeds, each according to its own type." And so it was. 12 The earth produced vegetation: plants bearing seeds, each according to its own type, and trees bearing fruit with seeds, each according to its own type. God saw that they were good. 13 There was evening, then morning-a third day.

And thus we have the precedent of the COVERS being rearranged on days two and three as the water is separated and then the surface water gathered!!

So considering the precedent of the rearranging of the water possibly day four also is a rearranging of the COVER, that on day four the LIGHTS THAT EXISTED since day one now can shine brightly on the earth as the atmospheric COVERING is changed, turned from translucent to occasionally transparent, as it is today!!

14 Then God said, "Let there be lights in the sky to separate the day from the night. They will be signs and will mark religious festivals, days, and years. 15 They will be lights in the sky to shine on the earth." And so it was. 16 God made (" to produce, to prepare, attend to, put in order, to observe, celebrate, to appoint, ordain, institute, to bring about") the two bright lights: the larger light to rule the day and the smaller light to rule the night. He also made (" to produce, to prepare, attend to, put in order, to observe, celebrate, to appoint, ordain, institute, to bring about") the stars. 17 God put them in the sky to give light to the earth, 18 to dominate the day and the night, and to separate the light from the darkness. God saw that it was good. 19 There was evening, then morning-a fourth day.

Take special note of "to dominate the day and the night, and to separate the light from the darkness."

From most every where in our solar system the sun only dominates, but from the surface of our rotating earth one experiences day and night and our moon ("the lesser light") is more apparent (dominates) as

it goes through its phase changes, even though it is often visible during the day also. Thus, even within the narrative of day four it is pointed out that the perspective is from the surface of the earth.

Conclusion:

- a) The narrative of Genesis 1:2 thru 1:19 concerns the phases in which the Spirit of God prepared the surface of the earth to receive the sea, air and land creatures as created on days five and six requiring dry surface land, occasional bright sunshine, and a suitable atmosphere high in water vapor and oxygen. Even the creating of plants on day three adds to this preparation as the plants generate and add oxygen to the atmosphere.
- b) On day four the surface atmosphere was changed so that the sun, moon, and stars can now shine brightly on the surface of the earth. The heaven/heavens was not created empty on day one, instead they were filled with the sun, moon and stars, a new and perfect creation as indicated by the Hebrew word bara!
- (1) "The Bible Knowledge Commentary", John F. Walvoord and Roy B. Zuck, Victor Books, 1985, p. 28

Day Five ,

Genesis 1:20-23

20 And God said, Let the waters bring forth abundantly the moving creature that hath life, and fowl [that] may fly above the earth in the open firmament (expanse) of heaven.

21 And God created great whales, and every living creature that moveth, which the waters brought forth abundantly, after their kind, and every winged fowl after his kind: and God saw that [it was] good.

22 And God blessed them, saying, Be fruitful, and multiply, and fill the waters in the seas, and let fowl multiply in the earth.

23 And (there was) the evening (darkness) and (there was) the morning (dawning light) were the fifth day (time, phase).







In these verses we find the continuing creation of life upon the earth with the sea creatures, which probably included fish, whales, and other air breathing mammals and reptiles, and marine crustaceans that live in the seas. Man knows so little about the deep seas that is impossible to realistically estimate the number of species that live in the seas.

In the same period God creates the animals that can fly through the air. The species that can fly are numerous and varied, including birds, flying mammals and reptiles, and winged insects.

Verse 21 tells us that He created these animals able to reproduce after their own kind. Thus we understand that these animals would ONLY reproduce after their OWN KIND and this would not allow for evolution from one kind of animal to another.

The listed ordering of creation among the animals is the same as that in which each of the environments were earlier provided, first the water creatures, next the flying creatures of the expanse of the atmosphere and lastly the dry land creatures. Displaying the order and purpose in all that God does.

Sea Creatures, Weird and Beautiful



Largest: Up to 110 feet long, possibly the largest creature to ever live, even bigger than the largest dinosaurs. Blue whales diet consists mainly of krill, a tiny shrimp that lives in tremendously large schools in almost every ocean of the world. Krill is probably one of the most plentiful food

species (outside of insects) anywhere on earth. It has to be to keep up with the blue whales' big appetite. A big blue can eat over a thousand krill at one time swallowing them with a tongue that weighs as much as an elephant! Blue whales eat the krill using a special type of filter on their mouths called a baleen. By gulping enormous amounts of sea water containing the live krill the blue whale closes its mouth and flushes the sea water back out through the filter leaving the krill behind for it to swallow. Small fish and plankton are also favorite food items of the whale. It takes about 8,000 lbs of fresh seafood a day to keep the blue whale well fed.



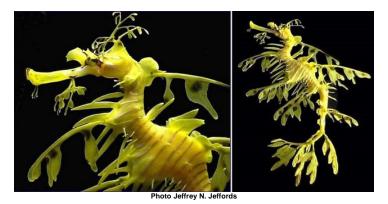
Largest-Extinct Sea Creature:

Plesiosaurs were magnificent ocean-dwelling reptiles that "flew" gracefully through the water with massive paddles. Plesiosaurs were one of the first kinds of extinct animal known to science, and were described as early as 1821. The smallest were about 6 feet long as adults, the largest were enormous pliosaurs up to 46 feet long long, comparable in size or even bigger than sperm whales (Physeter). They were possibly the biggest predators of all time.



Here are some Living Weird and Beautiful Creatures

Leafy Sea **Dragon**





A Leafy Sea Dragon (phycodurus eques) has long leaf-like protrusions all over its body, serving as camouflage among different types of floating seaweeds of kelp beds. Neither prey nor predators recognize it as a fish.

Umbrella Mouth Gulper Eel



Photo Bruce Robison

The Umbrella Mouth Gulper Eel (Eurypharynx Pelecanoides) can open its mouth to Pelican-like proportion, accommodating prey much larger than its size.

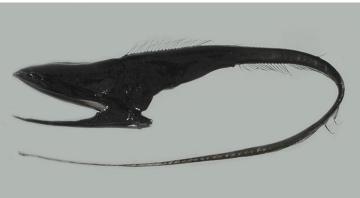


Photo captbluefin

Plus it can stretch and expand its stomach. The Eel itself can be almost one meter in length, and if it starts expanding. This means it can swallow and devour something more than 1.5 meters long.

Firefly Squid

This squid sees the world in color. And it makes deep-blue pretty light itself.



The Firefly Squid (Watasenia Scintillans), also called the Sparkling Enope Squid has special deep-blue light

producing organs called photophores. By flashing the lights on and off, it can attract prey before trapping it with its tentacles. It is also the only cephalopod species which have color vision!



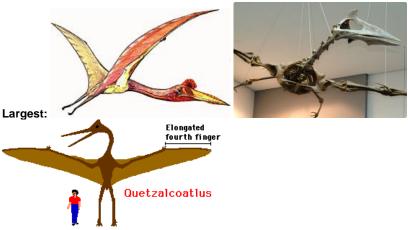


Each year off the coast of Toyama Bay, Japan, billions of these tiny squids will gather to spawn, creating a cool light show.

WOW!! God sure knows how to create !!

FlyingThere are species that fly, soar, glide, and parachute.





The extinct azhdarchid pterosaur Quetzalcoatlus with estimates of the wingspan ranging from 30 feet to 36 feet. The heaviest living flying animal is the great bustard at 46 pounds. The wandering albatross has the greatest wingspan of any living flying animal at 11 ft 11 in. Among living animals which fly over land, the Andean condor and the marabou stork have the largest wingspan at 9.7 ft.

Smallest:

There is no real minimum size for getting airborne. Indeed, there are many bacteria floating in the atmosphere that constitute part of the aeroplankton. However, to move about under one's own power and not be overly affected by the wind requires a certain amount of size. The smallest flying vertebrates are the bee hummingbird and the bumblebee bat, both of which may weigh less than 2 g. They are thought to represent the lower size limit for endotherm flight.

Fastest: The fastest of all known flying animals is the peregrine falcon, which when diving has been recorded flying at 200 mi/h or faster. The fastest animal in flapping flight might be the White-throated Needle-tailed Swift, at 100 mi/h. In level flapping flight, a good contender for the fastest living animal recorded is the red-breasted merganser at 100 mi/h.

Slowest: Most flying animals need to travel forward at a minimum speed to stay aloft. However, some creatures can stay in the same spot, known as hovering, either by rapidly flapping the wings, as do hummingbirds, hoverflies, dragonflies, and some others, or carefully using thermals, as do some birds of prey. The slowest flying non-hovering bird recorded is the American woodcock, at 8 km/h. However, many insects probably fly much slower than this.

Highest flying:

There are records of a Rüppell's Vulture Gyps rueppelli, a large vulture, being sucked into a jet engine 11,550 m (37,900 feet) above the Ivory Coast in West Africa. The animal that flies highest most regularly is the bar-headed goose Anser indicus, which migrates directly over the Himalayas between its nesting grounds in Tibet and its winter quarters in India. They are sometimes seen flying well above the peak of Mount Everest at 8,848 m (29,028 feet).



Most maneuverable:

A number of flying animals are known for their maneuverability. Many animals that can hover are often very maneuverable, being able to move in any direction as well as stay still. Other flying animals known for their aerial acrobatics are bats and crows.

Gliders: Flying dragon/lizard, Flying fish, Flying squirrel





Conclusion: WOW! God sure knows how to create!!

Day Six

Genesis 1:24-31

24 And God said, Let the earth bring forth the living creature after his kind, cattle, and creeping thing, and beast of the earth after his kind: and it was so.

25 And God made the beast of the earth after his kind, and cattle after their kind, and every thing that creepeth upon the earth after his kind: and God saw that [it was] good.

26 And God said, Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.

27 So God created man in his [own] image, in the image of God created he him; male and female created he them.

28 And God blessed them, and God said unto them, Be fruitful, and multiply, and replenish (fill) the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth.

29 And God said, Behold, I have given you every herb bearing seed, which [is] upon the face of all the earth, and every tree, in the which [is] the fruit of a tree yielding seed; to you it shall be for meat (food).

30 And to every beast of the earth, and to every fowl of the air, and to every thing that creepeth upon the earth, wherein [there is] life, [I have given] every green herb for meat (food): and it was so.







Then we have the creation of the land dwelling animals which would have included the dinosaurs and many other now extinct creatures which we know about only from their fossil remains. Each animal was designed to reproduce after itself, and not to evolve into something other than its own kind.

Verses 26, 27, and 28 describe the creation of man. Note that man is the only creature that God created in His own image. That makes man special. Man alone was created to have a unique relationship with God. This made him very different from all the other creatures that God made. God gave man dominion over all the earth and all the other living creatures.

Verses 29 and 30 indicate that plants were different from the animal life forms. While animals have "the breath and blood of life within them" plants do not.

Therefore plants are not alive in the same sense as the animals are. God gave the plants to animals and man to eat for food. One way that man demonstrates his dominion is

through farming as he uses the

wants and needs. And scientists

plants and animals for his own

31 And God saw every thing that he had made, and, behold, [it was] very good. And (there was) the evening (darkness) and There was) the morning (dawning light) were the sixth day (time, phase).

have confirmed that the best diet for man includes many generous portions of vegetables.

.

At the end of the sixth day God looked upon all that He had created and found it to be VERY GOOD!

DINOSAURS

Question: How many dinosaurs were there?

Answer: There are over **500** dinosaur genera (the plural of genus) that have been found, named and scientifically accepted.

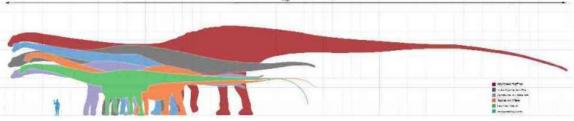
There are about an additional 100 genera that are dubious (these are frequently referred to as nomen dubium). These dinosaurs, usually represented by very incomplete fossils, may actually be examples of other, already named genera.

There are also almost 100 newly-discovered genera whose names have not been through the formal naming process (these are frequently referred to as nomen nudem). This process is done by the ICZN (the International Committee on Zoological Nomenclature) in which it is decided that a specimen represents a new genus.

Then the really tricky part has to be considered. People have only probably found only a small fraction of all the dinosaurs that ever existed. There are a lot more dinosaurs that people are finding all the time. Also, there are probably many, many types of dinosaurs that didn't fossilize at all and are lost forever. The actual number of dinosaurs genera that lived is unknown. The population numbers of the dinosaurs (that is, how many individuals of each genus existed) are also unknown.

Question: What was the biggest dinosaur?

Answer: The biggest dinosaurs were sauropods; they were gigantic, slow-moving, tiny-headed, cow-like planteaters from the late Jurassic period and the early Cretaceous period. They had very long necks which were useful for reaching wide (and tall) swatches of vegetation. The lengthy neck was counterbalanced by a massive tail. The following sauropods are the largest land animals ever discovered:

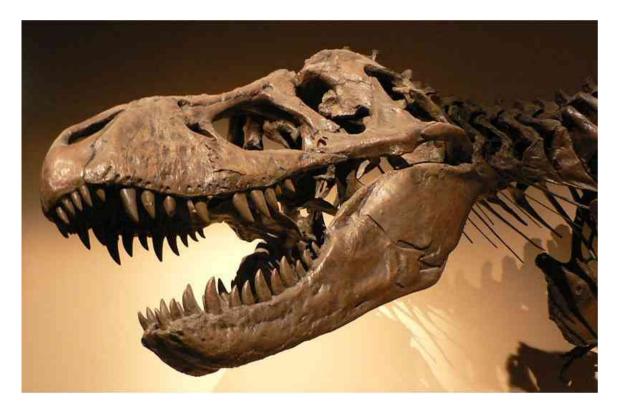


- Argentinosaurus huinculensis 115-130 feet long (35-40? m); 80-100 metric tons
- Paralititan 115-130 ft. (35-40 m) 70 tonnes
- Seismosaurus hallorum ("Earth-shaking lizard") 120+ feet long (37 m); 30-80 tons
- Supersaurus vivianae 100-130 feet long (30-40 m); 45-55 metric tons
- Ultrasauros 100+ feet long (30 m), +80 tons (this may be a large Brachiosaurus)
- Andesaurus delgadoi 130? feet (40 m)
- Bruhathkayosaurus matleyi 130? feet (40 m?)
- Argyrosaurus superbus 65-130? feet (20-40 m)
- Giraffatitan brancai 75-100? feet (23-30 m)
- Diplodocus grew up to 90 feet long (28 m).
- Brachiosaurus about 85 feet long (26 m), 40 feet tall, and weighed 70-80 tons.





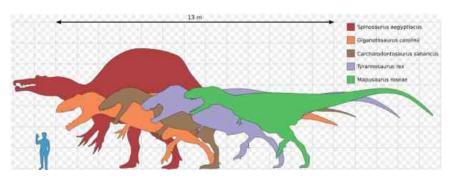
What a Footprint ?



The Meanest? - Tyrannosaurus rex skull

But blue whales are BIGGER THAN ANY of the dinosaurs were!

Smaller Theropods



Question: Which dinosaur was the smallest?

Answer: The smallest dinosaurs yet discovered are:

A new, crow-sized theropod, Microraptor was recently found in China. It is about 16 inches (40 cm long) and may be an adult.

- Compsognathus, a theropod (meat-eater) 2 feet (60 cm) long, from 145 million years ago. It was the size of a chicken and weighed about 6.5 pounds (3 kg).
- Saltopus a 2 feet (60 cm) long insectivore (insect-eater) from about 200 million years ago.
- Lesothosaurus a 3 feet (90 cm) long, fast running, plant-eater from Africa, 200 million years ago.
- Wannanosaurus a 39 inches (1 m) pachycephalosaur, a plant-eater from China, 83-73 million years ago.

Other small dinosuars include Micropachycephalosaurus, Microcephale, Nanosaurus, Gasparinisaura, Sinosauropteryx, Procompsognathus, Yandangornis, and Bambiraptor.

Mussaurus (meaning "mouse lizard") is the smallest complete dinosaur skeleton found, but it is from a hatchling (a baby). It was only 16 inches long (37 cm).



Medium sized Dino



Ashfall Fossil Beds State Historical Park Nebraska, USA

Summary: The state of Nebraska is a gold mine of fossil evidences to the past history of North America and the Earth. The Ashfall Fossil Beds deposits are of numerous extinct animals killed at an ancient watering hole by one or two feet of ash (powdered glass) with chemical analysis indicating the source of the ashfall to be an extinct volcanic caldera called Bruneau-Jarbidge eruptive center in southwest Idaho. These animals mostly died slowly due to inhalation of volcanic ash for they have abnormal patches of highly porous superficial bone on various parts of its skeleton, especially on the lower jaw and the shafts of the major limb bones and ribs and present day veterinarians have reported very similar growths on animals that have died of lung failure. There was a definite pattern to the arrangement of the skeletons in the ash bed. Digging down from the top they always found rhinoceroses first, then, at deeper levels, smaller hoofed animals such as horses and camels, and finally, birds and turtles. The latter were always at the very bottom of the ash bed, in a layer containing numerous footprints of rhinos and other hoofed animals. Evidence that the small creatures died first, then the middle-sized ones, and finally, the rhinos. The animals definitely did not die all at once; they were NOT (with the possible exception of the birds and turtles) buried alive.



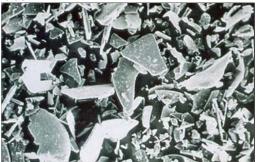
Many years ago a volcano in southwest Idaho spread a blanket of ash over a very large area. One or two feet of this powdered glass covered the flat savannah-like grasslands of northeastern Nebraska.

Most of the animals which lived here survived the actual ashfall, but as they continued to graze on the ash covered grasses, their lungs began to fill up with the abrasive powder. Soon their lungs became severely damaged and they began to die.

The smaller animals died first (smaller lung capacities) and finally, after perhaps three to five weeks, the last of the rhinos perished. Their bodies were quickly covered by the blowing and drifting ash.

Undisturbed except by an occasional scavenging meat-eater, the skeletons of these animals are preserved in their death positions, complete with evidence of their last meals in their mouths and stomachs and their last steps preserved in the sandstone below.

The Ashfall skeletons are found in an ancient waterhole. Fossil evidence at the site reveals complete, articulated skeletons of large mammals, birds, and turtles, as well as seeds of grasses and trees. **Ashfall skeletons are buried in a bed of pure volcanic ash.**



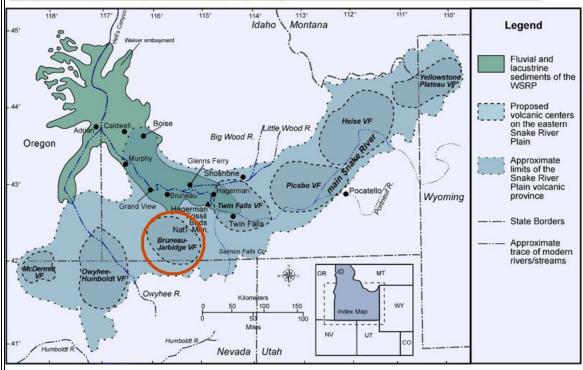
All Volcanic ash consists of tiny shards of glass from broken glass bubbles. These glass bubbles form and then break apart during powerful volcanic eruptions.

The ash particles are small enough to have been breathed deeply into the lungs of animals when the volcanic ash blanketed northern Nebraska years ago.

At the Ashfall fossil site in northeast Nebraska, the ground beneath the soil looks something like this in cross-sectional view below. Sedimentary rock layers (strata) contain fossils that reveal clues to environmental conditions and the animal life of specific times in the past. The particles of sediment that make up the rock reveal clues about the environmental setting and how the rock was deposited. (see more on Nebraska Geology) Chemical analysis reveals that the volcanic ash has the same components as an extinct volcanic caldera in Idaho that geologists call the Bruneau-Jarbidge Eruptive Center. The ash has been dated by Uranium fission tracks, and by single crystal Argon dating of the source material.

GEOLOGIC SETTING OF ASHFALL FOSSIL BEDS AND VICINITY

SEDMENTARY ROCK LAYERS				SIGNIGICANT FOSSILS	ENVIRONMENT	CLIMATE
Elev	Name	Age	Description	j l	OF DEPOSITION	
1750	LONG PINE FORMATION	GAP DUE TO	Loose sand and gravel with colorful pebbles of Rocky Mt. gravel up to 5° across	Zebras, lemmings, giant camels, muskrats, giant beavers, short-jawed four tuskers	Energetic river (probably ancestral Platte before diverted South by the first glaciers to reach Nebraska)	Still warm enough for arm adillos and large tortoises but cooling rapidly as ice sheets approached
1700	ASH HOLLOW FORMATION (CAP ROCK MEMBER	11	Ledge-forming sandstone with bed of silvery-gray volcanic ash 1 to 10 feet thick near the base	Barrel-bodied rhinos, giant land tortoises, camels, bur- rowing rodents, horses, bone-crushing carnivores	Broad flat savanna (grass- land with clumps of trees) periodically inundated by floodwaters	Still frost-free but drier than before
1650	VALENTINE FORMATION	12	Silty, clayey sand with Silty, clayey sand with Silty, clayey sand with Silty numerous limy nodules (DEVIL'S GULCH MEMBER)	Long-jawed four tuskers hornless rhinos, alligators, giant salamanders, fish fossil wood (both upright stumps and rolled logs)	River channels bordered by forested floodplains	Frost-free climate with abundant rainfall (evidence of drying climate in upper part of formation)
		14	Clean, cross-bedded sand with lenses of clay pebbles (CROOKSTON BRIDGE MEMBER)			



Source of the ash was Bruneau-Jarbidge about 600 miles from Ashfall Fossil site, third in a long string of seven massive ancient volcanic centers, <u>Yellowstone</u> being the last.

The Animals



Teleoceras, the most common fossil, is an extinct genus of grazing rhinoceros that lived in North America during the Miocene epoch, which ended about 5.3 million years ago, all the way to the early Pliocene epoch. Teleoceras had shorter legs than modern rhinos, and a barrel chest, making its build more like that of a hippopotamus than a modern rhino. Like the hippo, it was also semi-aquatic. Teleoceras had a single small nasal horn. One extraordinary specimen includes the remains of a Teleoceras calf trying to suckle from its mother. Here is the fossil on display at the National Museum of Natural History, Washington, DC.



There were many others including 5 species of horses, three species of camels, dogs, deer, birds and turtles, whose photos are deleted to save space.

Why it is <u>NOT</u> proper to "add up" the genealogies of Genesis chapter 5 and chapter 11!

- 1) "Every word of God is pure; He is a shield unto them that put their trust in him.

 Add thou not unto His words, lest He reprove thee, and thou be found a liar." Proverbs 30:5-6
 - a) NO where does the Bible "add up" the genealogies!
 - b) Or say to "add up" the genealogies!
 - c) Nor hint at how they should be "added up"!
 - d) Those that do so must assume that they know how the ancients did genealogies! But, in fact they often used different rules than just a strict biological father to son lineage. See 2) below

and the figure that follows.

- 2) The difficulties with assuming one knows how to "add up" the genealogies
 - a) Luke adds a name: In Luke 3:35-36 he includes a Cainan between Salah and Arphaxad. Genesis 11:12-13 includes No name between Arphaxad and Salah. Cainan is the son of Arphaxad and Shelah is the son of Cainan according to Luke; while in the Chronicle this name is not found. However, in Hebrew traditional lineage this name can be found, it is found in the Greek Septuagint Version. Why was this name not in our Bible and found in Septuagint and tradition? By some Hebrew traditions if a person died when they are very young before they have a chance to establish a name for himself, the child born to them will be known as the child of the living grandfather. This practice is shown in the book of Ruth where Ruth's son Obed is referred to as the son of Naomi. Ruth 14:7. If the son died before he established himself and legally took possession of the properties and rights as a son he would not be listed. Or if they were of bad reputation they might not be listed. But this will not be acceptable to the gentile world where actual parenthood is always counted. Many scholars have long proposed that due to the poetic similarity of Genesis chapter 5 and chapter 11 verses 10 thru 26 that only the most notable men were listed.
 - b) Is Luke favoring the Septuagint translation? If Luke is favoring the Septuagint translation that also includes Cainan then we have a problem since the Septuagint has many different numbers in the genealogies, (see the figure below.)
 - c) Yalad is multi-generational: The Hebrew word "yalad" (Strong's #3205) can indicate multigenerations, thus some scholars have proposed that Genesis is using the "Patriarchal-Age" method which unless it was obvious from the text that there was a direct father-son relationship, there was instead an ancestral relationship with the named descendant being born during the year of the death of the patriarch. (see the figure below)

Following we have the usage of "begat" ("yalad") including not only the patriarch, but entire families/tribes.

"And Canaan begat ("yalad") Sidon his firstborn, and Heth, And the Jebusite, and the Amorite and the Girgasite, And the Hivite, and the Arkite, and the Sinite, And the Arvadite, and the Zemarite, and the Hamathite: and afterward were the families of the Cannanites spread abroad." (Genesis 10:15-18)

Following we have the usage of "bare/begat" ("yalad") including 16 offspring in two generations.

"And sons of Gad; Ziphion, and Haggi, Shuni, and Ezbon, Eri, and Arodi, and Areli. And the sons of Asher; Jimnah, and Ishuah, and Isui, and Beriah, and Serah their sister: and the sons of Beriah; Heber, and Malchiel. These are the sons of Zilpah, whom Laban gave to Leah his daughter, and these she bare ("yalad") unto Jacob, even sixteen souls." (Genesis 46:16-18)

- e) The use of the term son is completely flexible: Christ was the son of David, and in 1 Chron. 26:24, we read: "Shebuel the son of Gershom, the son of Moses, was ruler of the treasures." This was in David's time, several hundred years after Moses. Yet Gershom was the son of Moses, while Shebuel was twelve or fifteen generations from the person whose son he is said to be:
- d) Matthew skips names: One would possibly think that Matthew in his genealogy for Christ would have copied directly from the Chronicles, but in fact in verse 1:8 there is skipped three names between Jehoram and Uzziah (Azariah) that 1 Chronicles 3:10-11 includes, that of Akaziah, Joash, and Amaziah. Affirming as "The Bible Knowledge Commentary" by Walvoord and Zuck says "Jewish reckoning did not require every name in order to satisfy a genealogy."

Sample Chronological Calculations of Birth Date - BC								
	"Ussher"			Age" Method				
	Masoretic	Septuagint	Masoretic	Septuagint				
Adam	4004	5490	10842	12028				
Seth	3874	5260	10712	11798				
Enos	3769	5055	10607	11593				
Cainan	3679	4865	9702	10688				
Mahalaleel	3609	4695	8792	9778				
Jared	3544	4530	7897	8883				
Enoch	3382	4388	6935	7921				
Methuselah	3317	4203	6570	7556				
Lamech	3130	4016	5601	6597				
Noah	2984	3828	5419	6399				
Flood	2348	3228	4819	5799				
Shem	2446	3326	4917	5897				
Aphaxad	2346	3226	4317	5297				
Cainan		3019		4762				
Salah	2311	2961	3879	4302				
Eber	2281	2831	3446	3842				
Peleg	2247	2697	2982	3438				
Reu -	2217	2567	2743	3099				
Serug	2185	2435	2504	2760				
Nahor	2155	2305	2274	2430				
Terah	2126	2126	2126	2126				
Abram	1996	1996	1996	1996				

Therefore, the Biblical genealogies are often formulated under rules that differ from the strict biological father to son lineage.

The Evidences for a Recent Dating for Adam, about 14,000 to 15,000 years Before Present

A recent genetic study of human genes related to the brain concluded that possibly there appeared a "microcephalin variant (that) could have arisen anywhere from 14,000 to 60,000 years ago" and an "ASPM variant ranged from 500 to 14,000 years" ago and "roughly correlating with the development of written language, spread of agriculture and development of cities" See story below.

Now if one assumes that the "microcephalin variant could have arisen anywhere from 14,000 to 60,000 years ago", possibly could correspond to the "Big Bang" or "Fortuitous Mutation" that Richard G. Klein refers to in his book "The Dawn of Human Culture" and says occurred about 50,000 years ago. Then, what about the "ASPM variant ranged from 500 to 14,000 years" ago and "roughly correlating with the development of written language, spread of agriculture and development of cities" as proposed.

The Bible repeatedly says that Adam and his immediate offspring were farmers

Genesis 2:15 And the Lord God took the man, and put him into the garden of Eden to dress it and too keep it."

Genesis 3:23 Therefore the Lord God sent him forth from the garden of Eden to till the ground from whence he was taken."

Genesis 4:2 And Abel was a keeper of sheep, but Cain was a tiller of the ground."

Here is a review of some of the findings by archaeologists concerning farming:

"The great majority of the cultivated plants of the world trace their origin to Asia. Out of 640 important cultivated plants, about 500 originated in Southern Asia. In Asia alone we have established five of the principle regions of cultivated plants.... The fifth region of origin in Asia is the Southwestern Asiatic centre and includes Asia Minor, Trans-Caucasia, Iran and Western Turkmenistan. This region is remarkable, first of all, for its richness in numbers of species of wheat resistant to different diseases...There is no doubt that Armenia is the chief home of cultivated wheat. Asia Minor and Trans-Caucasia gave origin to rye which is represented here by a great number of varieties and species....

Our studies show definitely that Asia is not only the home of the majority of modern cultivated plants, but also of our chief domesticated animals such as the cow, the yak, the buffalo, sheep, goat, horse, and pig...The chief home of the cow and other cattle, the Oriental type of horse, the goat and the sheep is specifically Iran....

As the result of a brilliant work of Dr. Sinskaya, the discovery was recently made that the home of alfalfa, the world's most important forage crop, is located in Trans-Caucasia and Iran....

From all these definitely established facts the importance of Asia as the primary home of the greatest majority of cultivated plants and domesticated animals is quite clear."

(Vavilov, N., "Asia: Source of Species" in Asia, February 1937, p. 113.)

More recent studies conducted by Melinda A Zeder and Brian Hesse (Science 287 (2000) 2254-57) place the initial domestication of goats to the Zargos Mountains at about 10,000 years ago. And Manfred Heun's (Science 278 (1997) 1312-14) studies indicate that large scale wheat cultivation began from 8,000 to 9,000 years ago near the Karacadag Mountains. Both areas are very near where the Tigris and Euphrates Rivers come close together.

"The cradle of agriculture generally has been placed in the Jordan Valley of the southern Levant (today's Israel and Jordan). But work by Simcha Lev-Yadun of Israel's Agricultural Research Organization and colleagues suggest the first farms may have been farther north, between the Tigris and Euphrates rivers in what is today northeastern Turkey and northern Syria.

Wild progenitors of the main Neolithic founder crops (einkorn wheat, emmer wheat, barley, lentil, pea, chickpea, bitter vetch, and flax) are found together only in this small core area of the Fertile Crescent.

Lev-Yadun reports that wild chickpea especially is extremely rare, yet it was a staple crop of Neolithic life 10,000 years ago. Agriculture, therefore, probably began in an area where chickpea is native. Archaeological evidence shows that the earliest known farming settlements of the Fertile Crescent were in this core area. Also, the limited genetic variability of these crops implies that they were <u>domesticated only once</u> — rather than by several different cultures at roughly the same time. Evidence of domesticated crops in the core area dates to about 10,000 years ago, while the earliest signs of farming elsewhere are about 9,300 years ago.

Neolithic sites discovered in the core area indicate that a society with plenty of food thrived there. In sites such as Cayonu, Novali Cori, and Gobekli Tepe, impressive architecture, images, and artifacts have been found.

Settlement sites are also larger in this area than many others of the same time in other parts of the Fertile

Crescent. ..." (From "The Cradle of Agriculture? New Evidence Moves the World's First Farmers into

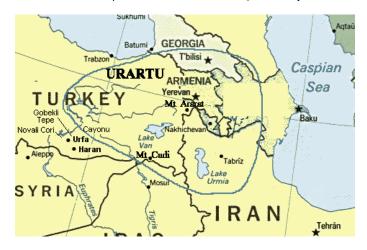
Turkey" by Reagan Duplisea, http://www.discoveringarchaeology.com/ articles/ 060100-turkeyfarm.shtml)

Genesis 11:2 And it came to pass, as they journeyed from the east, that they found a plain in the land of Shinar, and they dwelt there.

"It is known that agriculture spread from the Middle East to Europe during the Neolithic period about 12,000 years ago, but for many years archeologists have debated how this occurred. Was it due to the movement of people or to the movement of ideas? Previous genetic analysis of people living today suggests a migration - that the people moved - but critics have questioned this view. The latest study reinforces evidence of a migration in which people brought their ideas and lifestyle with them."(from http://www.sciencedaily.com/releases /2002/09/020911072622.htm)

Genesis 11:9... "the name of it called Babel; because the Lord did there confound the language of all the earth; and from thence did the Lord scatter them abroad upon the face of the earth.

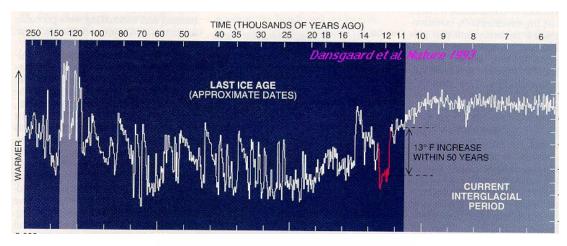
"A family tree of Indo-European languages suggests they began to spread and split about 9,000 years ago. The finding hints that farmers in what is now Turkey drove the language boom - and not later Siberian horsemen, as some linguists reckon. ... Around this time, farming techniques began to spread out of Anatolia - now Turkey - across Europe and Asia, archaeological evidence shows." (From "Language tree rooted in Turkey" by John Whitfield, http://www.nature.com/ nsu/nsu_pf/ 031124/ 031124-6.html) See story below.

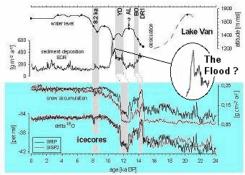


Are there any other evidences?

Genesis 5:29 And he called his name Noah, saying,
This same shall comfort us concerning our work and toil of our hands,
because of the ground which the Lord hath cursed.
Genesis 8:21 ... I will not again curse the ground any more for man's sake: ...
... neither will I again smite any more every thing living, ...

Looking at the Greenland ice core data and Lake Van varve data as follows.





(note: the gray band shifts show "a time difference of 570 (GRIP) or 730 (GISP2) years between the Late Pleistocene chronozones" for the varve data." and "At around 10,500 yr B. P. (this date also has a time shift error) a conspicious layer, consisting of 7-10 dark brown, thick varves ..., was deposited in Lake Van. Biomarker analyses of this organic carbon rich layer ... showed, that the lipid fraction consist mainly of longchain alkenones ... The author concludes that Prymnesiophyceae were the primary producers and suggests that **a** mixing event, following a long time of stagnation, led to the enrichment of nutrients in the lake water." (from Palaeo 122(1996)p.115))

We see a brief warm period from about 15,000 to 14,000 years ago, followed by a cooling period and then the even greater cooling of the Younger-Dryas period from about 13,500 to 12,000 years ago. Now what would greatly increase the toil of a group of **farmers** more than a period of severe climate? So it would seem that one could conjecture that the period of the garden of Eden was the relatively warm period of about 15,000 to 14,000 years ago when Adam started farming and then this was followed by the cool period of from 14,000 years ago to about 12,000, **"the curse of the ground"** a period in which farming was more difficult. Then about 12,000 years ago the warming up begins and farming becomes easier and proliferates.

How about the location?

As already shown the data on the farmers indicates that the after the flood Genesis history took place in the Ararat area and that the area is also the origin of many of the known farm crops and domesticated animals. Also all four of the rivers of Eden listed in Genesis 2:11-14 can be readily identified, the "Perath, Hiddekel, Gihon and Pishon"

"Perath is simply the Hebrew version of Arabic Firat and Greek Euphrates;

"Hiddekel is Hebrew for Sumerian Idiglat from which the Greek Tigris derives."

Gihon; "... the River Aras, flowing into the Caspian Sea from the mountains north of Lake Urmia, was once called the Gaihun. By checking the writings of the Islamic geographers who accompanied the Arabic invasion of Persia in the 8th century, I was able to confirm that this was indeed the case. Moreover, even as late as the last century, Victorian atlases and encyclopaedias were still naming the river as the Gaihun-Aras. The Gaihun is therefore the missing biblical Gihon."

"Pishon - "Hebrew (West Semitic) name derived from the old Iranian Uizhun, where the Iranian vowel U' had been converted into the Semitic labial consonant 'P'. Thus we have Uizhun to Pishon. Strange as it may seem, such switches do occur between the two language groups. For instance, one archaeological site in Iran is known by its Arabic (West Semitic) name of Pisdeli whereas its ancient (Iranian) name was Uishteri. The river Uizhun (the modern Qezel Uzun) - thus identified as the biblical Pishon - flows down from the mountains of Kurdistan and empties into the southern basin

of the Caspian Sea."

See "The Road to paradise" below for more information.

All people are related, but "In the article in the November 2001 issue of The American Journal of Human Genetics, Ariella Oppenheim of the Hebrew University of Israel wrote that this new study revealed that <u>Jews have a closer genetic relationship to populations in the northern Mediterranean (Kurds, Anatolian Turks, and Armenians)</u> than to populations in the southern Mediterranean (Arabs and Bedouins)." (from http://www.barzan.com/kevin_brook.htm)

Conclusion:

We have summarized some of the data that seems to indicate that there was a cultural shift for humans that was brought on by the development of the farming society possibly allowed by the ASPM gene variant as early as 14,000 years ago. By examining the available archaeological data on the development of this farming community and comparing it to the Biblical Genesis description of Adam and his descendants we have attempted to demonstrate how this data provides us with an approximate time line for the Biblical Adam, the first man by Biblical definition, a **farmer**. Thus by **farming** man demonstrates his ability to;

... let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.

Genesis 1:26

And God said, Behold, I have given you every herb bearing seed, which is upon the face of the earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be for meat.

Genesis 1:29





Genes Show Signs Brain Still Evolving

By LAURAN NEERGAARD, AP Medical Writer Fri Sep 9, 1:21 AM ET

The human brain may still be evolving. So suggests new research that tracked changes in two genes thought to help regulate brain growth, changes that appeared well after the rise of modern humans 200,000 years ago.

That the defining feature of humans — our large brains — continued to evolve as recently as 5,800 years ago, and may be doing so today, promises to surprise the average person, if not biologists.

"We, including scientists, have considered ourselves as sort of the pinnacle of evolution," noted lead researcher Bruce Lahn, a University of Chicago geneticist whose studies appear in Friday's edition of the journal Science.

"There's a sense we as humans have kind of peaked," agreed Greg Wray, director of Duke University's Center for Evolutionary Genomics. "A different way to look at is it's almost impossible for evolution not to happen."

Still, the findings also are controversial, because it's far from clear what effect the genetic changes had or if they arose when Lahn's "molecular clock" suggests — at roughly the same time period as some cultural achievements, including written language and the development of cities.

Lahn and colleagues examined two genes, named microcephalin and ASPM, that are connected to brain size. If those genes don't work, babies are born with severely small brains, called microcephaly.

Using DNA samples from ethnically diverse populations, they identified a collection of variations in each gene that occurred with unusually high frequency. In fact, the variations were so common they couldn't be accidental mutations but instead were probably due to natural selection, where genetic changes that are favorable to a species quickly gain a foothold and begin to spread, the researchers report.

Lahn offers an analogy: Medieval monks would copy manuscripts and each copy would inevitably contain errors — accidental mutations. Years later, a ruler declares one of those copies the definitive manuscript, and a rush is on to make many copies of that version — so whatever changes from the original are in this presumed important copy become widely disseminated.

Scientists attempt to date genetic changes by tracing back to such spread, using a statistical model that assumes genes have a certain mutation rate over time.

For the microcephalin gene, the variation arose about 37,000 years ago, about the time period when art, music and tool-making were emerging, Lahn said. For ASPM, the variation arose about 5,800 years ago, roughly correlating with the development of written language, spread of agriculture and development of cities, he said.

"The genetic evolution of humans in the very recent past might in some ways be linked to the cultural evolution," he said.

Other scientists urge great caution in interpreting the research.

That the genetic changes have anything to do with brain size or intelligence "is totally unproven and potentially dangerous territory to get into with such sketchy data," stressed Dr. Francis Collins, director of the National Human Genome Research Institute.

Aside from not knowing what the gene variants actually do, no one knows how precise the model Lahn used to date them is, Collins added.

Lahn's own calculations acknowledge that the microcephalin variant could have arisen anywhere from 14,000 to 60,000 years ago, and that the uncertainty about the ASPM variant ranged from 500 to 14,000 years ago.

Those criticisms are particularly important, Collins said, because Lahn's testing did find geographic differences in populations harboring the gene variants today. They were less common in sub-Saharan African populations, for example.

That does not mean one population is smarter than another, Lahn and other scientists stressed, noting that numerous other genes are key to brain development.

"There's just no correlation," said Duke's Wray, calling education and other environmental factors more important for intelligence than DNA anyway.

The work was funded by the Howard Hughes Medical Institute.

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nature

scienceupdate

Language tree rooted in Turkey

Evolutionary ideas give farmers credit for Indo-European tongues.

27 November 2003

John Whitfield

A family tree of Indo-European languages suggests they began to spread and split about 9,000 years ago. The finding hints that farmers in what is now Turkey drove the language boom - and not later Siberian horsemen, as some linguists reckon.

Russell Gray and Quentin Atkinson, of the University of Auckland in New Zealand use the rate at which words change to gauge the age of the tree's roots - just as biologists estimate a species' age from the rate of gene mutations. The differences between words, or DNA sequences, are a measure of how closely languages, or species, are related.

Gray and Atkinson analysed 87 languages from Irish to Afghan. Rather than compare entire dictionaries, they used a list of 200 words that are found in all cultures, such as 'I', 'hunt' and 'sky'. Words are better understood than grammar as a guide to language history; the same sentence structure can arise independently in different tongues.

The resulting tree matches many existing ideas about language development. Spanish and Portuguese come out as sisters, for example - both are cousins to German, and Hindi is a more distant relation to all three.

All other Indo-European languages split off from Hittite, the oldest recorded member of the group, between 8,000 and 10,000 years ago, the pair calculates 1.

Around this time, farming techniques began to spread out of Anatolia - now Turkey - across Europe and Asia, archaeological evidence shows. The farmers themselves may have moved, or natives may have adopted words along with agricultural technology.

The conclusion will be controversial, as there is no consensus on where Indo-European languages came from. Some linguists believe that Kurgan horsemen carried them out of central Asia 6,000 years ago. "No matter how we [changed] the analysis or assumptions, we couldn't get a date of around 6,000 years," says Gray.

"This kind of study is exactly what linguistics needs," says April McMahon, who studies the history of languages at the University of Sheffield, UK. It shows how ideas about language evolution can be tested, she says: "Linguists have always been good at coming up with bold hypotheses, but they haven't been terribly good at testing them."

But the technique is still fraught with difficulties, McMahon warns. There is lots of word-swapping within language groups. English took 'skirt' from the Vikings, for example, but 'shirt' is original. Linguists must separate the shared from the swapped, as any error will affect later studies.

The Kurgan might not be out of the picture entirely, says McMahon - they may have triggered a later wave of languages. "This isn't going to knock the debate on the head," she says.

Biology and linguistics can learn a lot from each other, comments geneticist David Searls of GlaxoSmithKline Pharmaceuticals, based in King of Prussia, Pennsylvania. "There may be some fundamental principles of evolution of complex systems, such as languages and organisms," he says.

References

 Gray, R. D. & Atkinson, Q. D. Language-tree divergence times support the Anatolian theory of Indo-European origin. *Nature*, 426, 435 - 439, doi:10.1038/nature02029 (2003).

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The Road to Paradise

Published in the Express on Monday, February 8, 1999

The snow-covered dome of the Mountain of God, shrouded in billowing clouds, towered above the old Mongol village known locally as 'the honeycomb'. Earlier that morning I had set out on a pilgrimage to the Exalted Throne of Yahweh where Adam's god dwelt. Within an hour the noise and chaos of Tabriz had been left far behind, as our four-wheel drive ascended out of the alpine valley of the Adji Chay onto the plateau of the Sahand massif, with imposing volcano at its heart. Now I found myself at the entrance to one of our world's most extraordinary places - the troglodyte village of Kandovan.

Ambling down the cobbled street - only just wide enough to take a donkey and cart - I turned up a steep side alley, all the time stalked by a clutch of free-roaming chickens. The alley soon morphed into a roughly sculpted flight of steps which twisted and turned between huge canine teeth of lava. Each was a home - a dwelling from a bygone age with rickety wooden door and tiny mullioned windows. In this Dysneyesque landscape of cave-dwellers, I almost expected Pinocchio to appear around the next bend.



Kandovan - 'The Honeycombe'.

My long journey, starting in the research libraries of London University, had led me to the Mesopotamian flood plain and on up into the mountains of Kurdistan, finally to reach the place the Book of Genesis calls the Garden of Eden.

There is no straightforward way to explain how an Egyptologist, used to working in the dry heat of the north African deserts, should end up traversing the Zagros mountains of western Iran in search of the earthly paradise. I had begun my studies in the Departments of Egyptology and Ancient History at University College, London, with a major interest in the complex chronology of Egyptian civilisation. My PhD work to radically revise that chronology had inevitably drawn me into the world of biblical history - so closely bound up with the land of the pharaohs. Years of research had led me to the conclusion that many of the stories in the Old Testament were based on real historical events: the Israelite sojourn in Egypt, the Exodus, the conquest of the Promised Land - all were attestable within the archaeological record once the correct chronology had been applied.

But why was I now delving into the Book of Genesis - that most mythological and hoary of the biblical texts? Surely it would have been better to leave well alone? But that is not my way. The simple fact is that ancient stories and legends have always fascinated me and the chance to uncover the historical reality behind the greatest legend of them all was just too tempting an opportunity to pass by.



The 'Temptation Seal' on display in the British Museum.

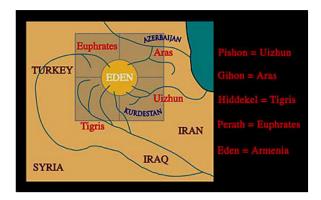
Back in 1987 I had been sent a short, privately published paper by amateur historian, Reginald Walker (1917-1989), which proposed a location for the Garden of Eden in northwestern Iran. The main thrust of Walker's argument was that the four rivers of Eden, described in Chapter Two of Genesis, were to be found in that region. All four had their sources (the Bible refers to them as 'heads') around the two great salt lakes of Van and Urmia.

Ever since the time of the Jewish historian Josephus, a near contemporary of Christ, scholars have tried to use Genesis 2 to locate Eden. But the problem has always been the identification of the rivers themselves. The Bible calls them Perath, Hiddekel, Gihon and Pishon. The first two are no problem: the Perath is simply the Hebrew version of Arabic Firat and Greek Euphrates; similarly the Hiddekel is Hebrew for Sumerian Idiglat from which the Greek Tigris derives. The remaining two rivers, however, have always been a mystery. Clearly, in order to locate Eden precisely, we need to find the sources of all four - and that's where Walker's research comes in.

He showed that the River Aras, flowing into the Caspian Sea from the mountains north of Lake Urmia, was once called the Gaihun. By checking the writings of the Islamic geographers who accompanied the Arabic invasion of Persia in the 8th century, I was able to confirm that this was indeed the case. Moreover, even as late as the last century, Victorian atlases and encyclopaedias were still naming the river as the Gaihun-Aras. The Gaihun is therefore the

missing biblical Gihon.

The fourth river - the Pishon - was more difficult to find. Walker suggested that this Hebrew (West Semitic) name derived from the old Iranian Uizhun, where the Iranian vowel 'U' had been converted into the Semitic labial consonant 'P'. Thus we have Uizhun to Pishon. Strange as it may seem, such switches do occur between the two language groups. For instance, one archaeological site in Iran is known by its Arabic (West Semitic) name of Pisdeli whereas its ancient (Iranian) name was Uishteri. The river Uizhun (the modern Qezel Uzun) - thus identified as the biblical Pishon - flows down from the mountains of Kurdistan and empties into the southern basin of the Caspian Sea.



The four rivers of Eden.

Bringing all this together we find that the sources of all four rivers originate in the highland area which Alexander the Great knew as Armenia and we know today as eastern Turkey and western Iran.

An extra-biblical Sumerian epic known as 'Enmerkar and the Lord of Aratta' relates the tale of a journey made by the envoy of Enmerkar, King of Uruk, from his home city in southern Mesopotamia, through the seven high passes of the Zagros range and down into the magical kingdom of Aratta - the 'Eldorado' of the ancient world. Enmerkar was the second ruler of Uruk after the Flood, according to the Sumerian King List. A crucial line in the epic describes the envoy descending from the last of the seven mountain passes (the Sumerians called them 'gates') and crossing a broad plain before arriving at the city of Aratta with its red-painted city wall.

The envoy, journeying to Aratta, covered his feet with the dust of the road and stirred up the pebbles of the mountains. ... Five gates, six gates, seven gates he traversed. ... Like a huge serpent prowling about in the plain, he was unopposed. ... He lifted up his eyes as he approached Aratta. [extracts from 'Enmerkar and the Lord of Aratta']

Here, the Sumerian word for 'plain' is edin which some scholars believe is the source of the word Eden in Genesis.

So, combining Walker's discovery of the four rivers together with the Sumerian location of Eden, it seemed as though the whereabouts of the lost Eden and its fabled garden was near to being resolved. I decided to set out for the ancient city of Susa (burial place of Daniel of the lions' den) in the south-western flood plain of Iran (Iraq was off bounds for obvious reasons) from where I determined to retrace the Sumerian envoy's route to paradise.



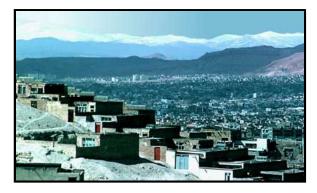
The location of Eden (red shading) in Western Iran and Eastern Turkey.

Following the ancient track through the seven 'gates', I eventually reached the Miyandoab plain to the south of Lake Urmia. The journey had taken four days by car but would have taken the envoy the best part of four months by donkey. The edin remains today one of the lushest regions of the Middle East: thick soil, fruit orchards and vineyards, lazy meandering rivers. This, I am sure, was the original heart of Eden which, over time, became a much wider area, including both the salt lakes and the Garden of Eden itself. The Bible describes the latter as being 'east in Eden' - in other words to the east of but still within the wider territory of Eden.

My driver and I continued eastwards, between the south-eastern shore of Lake Urmia and the towering volcanic peak of Mount Sahand. An hour's drive along the highway brought us into a long west to east valley, the slopes of which were terraced with 'every kind of tree' smothered in spring blossom

God planted a garden in Eden, which is in the east, and there he put the man he had fashioned. From the soil, God caused to grow every kind of tree, enticing to look at and good to eat. [Genesis 2:8-9]

All around a high snow-laden ring enclosed the valley, nurturing its warm micro-climate. The nearest mountain to the north glowed bright red in the low evening light - a pile of pure red ochre. At its foot sprawled the regional capital of Tabriz, squatting at the centre of the valley where Adam and Eve (whoever they were) once lived according to biblical tradition. The first thing which came to mind was paradise lost. Nothing of the earthly garden and its settlement could have survived beneath these bustling streets. But then, away from the city, I soon discovered that there was much that remains of Adam's Neolithic culture.



Paradise Lost - the sprawling city of Tabriz.

This was the region where Man first began to settle down to sedentary life; where he learnt to domesticate animals and plant his crops; and where he began to bury his dead in graves, the bones painted in red-ochre. Adam's name means the 'red-earth' man. According to Sumerian mythology, Man was crafted by the gods from the clay of the earth, just as a potter throws his red clay pots on the wheel. The creation of Man in Genesis is much the same.

Yahweh God shaped Man (Heb. Adam) from the dust (Heb. aphar) of the earth (Heb. adamah) and blew the breath of life into his nostrils, and Man became a living being. [Genesis 2:7]

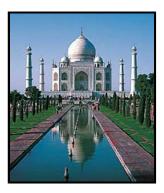
... return to the earth (Heb. adamah), as you were taken from it. For dust (Heb. aphar) you are

and to dust (Heb. aphar) you shall return. [Genesis 3:19]

Here the word 'dust' is a poetical translation. The understanding of Hebrew aphar is the earth from which clay is made, or simply clay itself, and I believe the clay which gave Adam his name was sourced in the red mountain looking down on Tabriz. Throughout many prehistoric cultures (and including the later Mesoamerican civilisations such as the Maya) the daubing of human bones in red paint or powder was a substitute for the life-blood which had been lost with the decaying flesh.

The Hebrew word for 'garden' used in Garden of Eden is gan which has the meaning 'walled' or 'enclosed garden'. The enclosed valley of the Adji Chay is just that - a rich-soiled paradisiacal haven protected by high mountain walls. The Greek version of the Old Testament calls the Garden of Eden 'Paradise' (paradeisos) after the ancient Persian pairidaeza meaning 'enclosed parkland'. The great Meidans (royal squares) of Islamic Persia, particularly the beautiful Meidan-é Imam of Isfahan, are symbolic representations of the original Garden of Eden with their high enclosures and formal gardens containing fountains and pools.

When the descendants of the Mongol chieftains who had invaded Persia in the 13th century moved on into India to become the Mogul emperors of the 16th to 19th centuries, they took the Persian ideas relating to the Garden of Eden with them. So it was that Shah Jehan built the Taj Mahal for his beloved queen, Muntaz Mahal, not simply as a mausoleum but as a representation of heaven itself - with the mausoleum functioning as the Throne of God. Jehan was effectively recreating the paradise on earth which had been lost to humanity following the expulsion of Adam and Eve from the Garden of Eden. A study of the Koranic inscriptions around the arches of the Taj, undertaken by Professor Wayne E. Begley of Iowa University, has shown that this was the hidden secret of the building - the sacred knowledge of Eden brought out of Sufic Iran.



The Taj Mahal - an architects reconstruction of Eden.

However, now that the landscape of Eden and its garden have finally been identified, I believe we are in a position to read much more into this extraordinary 17th-century monument to one man's vanity.

I shall scale the heavens. Higher than the stars of God I shall set my throne. I shall sit on the Mountain of the Assembly far away to the north. I shall climb high above the clouds; I shall rival the Most High. [Isaiah 14:13-14]

The Taj Mahal's glistening white dome, can be seen as a representation of the snow-capped Mount Sahand - the original exalted throne of God. The formal gardens in front of the Taj mirror the garden of paradise with the central pool (representing Lake Urmia) and the four water channels (representing the four rivers of Eden) flowing out from the centre of the complex. The ornamental arch leading into the enclosed garden of the Taj Mahal represents the mountain pass or 'gate' leading into Eden which was ferociously guarded by the cherubim and the Fiery Flashing Sword. The symbolism is striking.

But, back in the real Garden of Eden, we still have much more to discover. Even further to the east of the Adji Chay valley and Tabriz, beyond a high pass leading out of the Garden of Eden, is the land of Nod into which Cain was exiled after he had murdered his brother Abel. The area is still today called Upper and Lower Noqdi and many villages bear the epithet Noqdi ('belonging to Nod').

In the same region we find the town of Kheruabad. The name means 'settlement of the Kherupeople' and the Kheru were the Kerubim (Cherubs) of Genesis who protected the eastern entrance into Eden. The volcanic peak which guards the eastern gateway back into the Garden of Eden is a good candidate for the 'Fiery Flashing Sword' associated with the Kerubim. When I travelled over the pass beneath Savalan volcano for the first time, the vehicle was pounded by a violent electrical storm. To the ancients, used to the metaphor of jagged peaks as divine swords or spears, it would have been easy to envisage the angry mountain, casting down its bolts of lightening, as the Fiery Flashing Sword of Genesis.



The Garden of Eden in Western Iran.

I returned to Eden from Nod by a different route, travelling along the valley of the Ahar Chay the next river basin north of the Adji Chay. The Ahar Chay is a major tributary of the Gaihun-Aras/Gihon which, according to Genesis 2 'winds all through the land of Cush'. My map confirmed once more that we really were in the primordial landscape of Adam and Eve. Separating the Ahar and Adji valleys, and acting as the northern wall of the Garden of Eden, stretched a high snow-capped ridge named Kusheh Dagh - the 'Mountain of Cush'.

Long after nightfall I was back in my Tabriz Intercontinental Hotel bed, dreaming of an early morning climb up to the Mountain of God.

The troglodyte village of Kandovan seems as old as the mountain to which it clings. We can certainly record its history back to the Mongol invasion of Persia in the 13th century when a group of settlers occupied the village. But none of today's locals have memories beyond the arrival of their Asiatic ancestors. Did the village exist before that time? It seems highly likely, given the complex agricultural terracing which covers the steep-sided valleys around the holy mountain. Assyrian war annals of the 8th century BC mention towns in the vicinity of Mount Uash (the Assyrian name for Sahand volcano) and these population centres would have required considerable agricultural produce which must have been eked out of the volcanic soil clinging to the slopes of Sahand. Beyond the 8th century BC we cannot go with any certainty, but Neolithic occupation around Lake Urmia and Mount Sahand has been confirmed by limited archaeological investigations. Of the thousands of ancient occupation mounds surveyed in this region only a tiny percentage have been excavated. We have just begun to scratch the surface in the land where human civilisation began.

Whatever the ancient history of Kandovan, the soul of the place is timeless. Hardly anything has changed over the centuries - until very recently, that is, when electricity was piped up from Tabriz. The only other concession to the modern world is a fag shop and a picnic area for Tabrizi weekend tourists. They come up the mountain armed with plastic containers to collect the water which flows down from the nearby summit of the mountain. This water is regarded as having magical properties: it cures the sick and prolongs life. Many a grandma or grandpa in Tabriz are fed the holy water of Mount Sahand to keep them fit and strong. The reason for this veneration is all to do with the sacred source of the river which runs through the Garden of Eden.

At the summit of one of the two peaks of Sahand the extinct volcanic chimney overflows with ice-cool water as if from a bottomless well. The locals call it Jam Daghi - 'Mountain of the Chalice'. The water which gurgles from the tiny lake joins other streams, flows past Kandovan and on down into the Adji Chay valley, eventually forming a marshy delta on the eastern shore of Lake Urmia.

A river flowed from Eden to water the garden, and from there it divided to make four streams (Hebrew roshim meaning 'heads'). [Genesis 2:10]

In Sumerian theology spring-water lakes on top of mountains were regarded as holy places where humans might communicate with the great god of the underworld ocean of sweet water

upon which the earth floated. Such an interface between the worlds of the living and dead was called an abzu, from which we get our word abyss. The god of the abzu was known to the Sumerians as Enki ('Lord of the Earth') - the creator of humankind and the 'friend of Man'. The Akkadians and Babylonians knew him as Ea (pronounced Éya) and it was this Ea who warned the Mesopotamian hero of the flood of the impending destruction of mankind by the stormgod, Elil (Sumerian Enlil). Could Ea, god of the Sahand abyss, have been the deity worshipped by Adam and Noah? You will have to wait for another day for the story of the flood when I will reveal the hidden name borne by the god of the Israelite ancestors.

Meanwhile, the troglodyte village of Kandovan with its volcanic spires was as close as I could get to Adam's world. I had travelled over one thousand kilometres from the Mesopotamian plain to the Garden of God. I had crossed seven mountain ridges, through the ancient lands of Kuzestan, Luristan and Kurdistan. I had followed in the footsteps of Enmerkar's weary envoy as he crossed over into the mysterious land of Aratta and, beyond, I had found myself in the primeval world of Adam and Eve. I was literally in Seventh Heaven. My journey had come to an end just below the summit of God's holy mountain. The Exalted Throne of God was within reach, a thousand metres above me, but sadly not this time. Dark clouds had enveloped the mountain and falling snow began to shroud the way forward. My meeting with God would have to wait for another time. I headed down the mountain, leaving Pinocchio and his friends to their own devices.

Son of Man, raise a lament ... You were in Eden, in the Garden of God ... I made you a living creature with outstretched wings, as guardian, you were upon the holy Mountain of God, you walked in the midst of red-hot coals. ... I have cast you down from the Mountain of God and destroyed you, guardian winged creature, amid the coals. [Ezekiel 28:11-19]



Day Seven

Genesis 2:1-4

- 1. Thus the heavens and the earth were finished, and all the host of them.
- 2. And on the seventh day God ended his work which he had made; and he rested on the seventh day from all his Exodus 20:8 Remember the sabbath work which he had made.
- 3. And God blessed the seventh day, and sanctified it: because that in it he had rested from all his work which God created and made.
- 4. These are the generations of the heavens and of the earth when they were created, in the day (time) that the Lord God made the earth and the heavens...



day, to keep it holy.

9 Six days shalt thou labor, and do all thy work:

10 But the seventh day is the sabbath of the LORD thy God: in it thou shalt not do any work, thou, nor thy son, nor thy daughter, thy manservant, nor thy maidservant, nor thy cattle, nor thy stranger that is within thy gates: 11 For in six days (times, phases) the LORD made heaven and earth, the sea, and all that in them is, and rested the seventh day (time): wherefore the LORD blessed the sabbath day (time), and hallowed it.

On the seventh day God rested from his work. No, he wasn't tired. The word rested means that he ceased or finished. His creation was complete at that time. Because God rested on the seventh day, we set aside one day each week to cease from our work and remember our Creator.

To the only eternal creator God time is completely different than it is to physical man. We are a prisoner to our physical time, but the eternal God is not since He created our physical universe including our time dimension.

Psalms 90:2 Before the mountains were brought forth, or ever thou hadst formed the earth and the world, even from everlasting to everlasting, thou [art] God.

Psalms 90:4 For a thousand years in thy sight [are but] as yesterday when it is past, and [as] a watch in the night.

Therefore, each of the creation "days" were time as in the sight of God and not 24 hour man days.

The Days of Genesis

"And the evening and the morning were the _____ day."

Needless to say much has been written on the subject of the creation days of Genesis. The poetic simplicity of Genesis 1 leaves much to the imagination. Can these days of the creation be different than a literal 24 hour day? First consider Psalms 90:4 and 2 Peter 3:8 that follow which indicate that time to the Lord is very different than time is to man.

> "For a thousand years in thy sight are but as yesterday" when it is past, and as a watch in the night."

"... that one day is with the Lord as a thousand years, and a thousand years as one day."

Some have taken the two passages above to mean that one day is exactly one thousand years, but it is not a mathematical formula since 1000 years is compared to both yesterday (24 hours) and a 3 hour watch in the night. It appears more likely that they mean that the Lord exists completely outside of our time domain and can look upon all of our life's history at one time simultaneously, as he wishes. He obviously created the universe with our

beautiful planet and all its wonderful living things as He wished and on His own time basis.

Let us take a closer look at how the key Hebrew words of concern can be translated since often each Hebrew word has many uses depending upon the context. We will look at selected extractions of the Strong's Exhaustive Concordance and The Interlinear Bible by Jay P. Green, with selected portions placed in red boxes for emphasis.

We start with the Strong's Hebrew and Chaldee Dictionary extract for 3117 "yowm", Fig. 1 below.

```
3117. יים yôwm. yome; from an unused root
            mean, to be hot; a day (as the warm
hours), whether lit. (from sunrise to sunset, or from
one sunset to the next), or fig. (a space of time de-
 fined by an associated term), [often used adv.]:-age,
 + always, + chronicles, continually (-nuce), daily,
 ([hirth-], each, to) day, (now a, two) days (agone),
 + elder, x end, + evening, + (for) ever (-lasting,
  -more), × full, life, as (so) long as (. . . live), (even:
  now, + old, + outlived, + perpetually, presently.
  + remaineth, × required, season, × since, space.
  then, (process of) time. \pm as at other times, \pm in trou-
  ble, weather, (as) when, (a, the, within a) while (that),
  \times whole (+ age), (full) year (-ly), + younger.
  3118. Dir yowm (Chald.), yome; corresp. to 3117;
             a day:-day (by day), time.
  2110 harit vāwmām nomarm'i from 8:17:
```

Fig1

Note that there can be two uses of the word, as a literal day, or as a figurative day for a period of time to be defined by associated words.

Also we will look at the "Lexical Aids for the Old Testament" edited by Spiros Zodhiates for yowm in Fig. 2 below.

3117. Yowm; day, a number of days, some time, year, life [when in the pl.); today; in the daytime, on the same day; at present, now. A point in time and a sphere of time are both expressed by yowm. It is the period of light which is not darkness. It can be 24 hours, time in general, a specific point in time, or a year. When used in construction with other Hab. parts of speech, it can mean "when," "on some particular day," "in the time of," "as long as," or "continually." The Heb. syn., 'owr (216), "light," and boger (1242), "morning," are sometimes translated as "day." Daytime was divided by natural phenomena, not regular hourly divisions (Gen. 43:16; 15:12; 18:1; Ex. 18:13). The "day" sometimes begins with evening (Est. 4:16; Dan. 8:14) and sometimes with morning (Deut. 28:66,67). Yowm is connected with the sovereignty of God. He existed before etemity began (Ps. 90:4; Isa. 43:13; Dan. 7:19). God created time (Gen. 1:1) and It is under His control (Ps. 74:16). Mankind

Fig2

Note that this author expands on Strong's comments and repeatedly emphasizes that yowm can be a period of time. We look at some of the places early in the Old Testament at which yowm has been translated as time in Fig 3 below. (Over 40 times depending upon the translation.)

```
TIME; LIFETIME; MEALTIME; SOMETIME; TIMES;
UNTIMELY.

Ge 4: 3 And in process of t it came to pass 3117

17: 21 shall bear unto thee at this set t

18: 10 thee according to the t of life: *6256

14 At the t appointed I will return

14 according to the t of life; and *6256

21: 2 at the set t of which God had

22: it came to pass at that t, that 6256;

22: 15 out of heavon the second t.

21: 1 of water at the t of the evening,

11 the t that women go out to draw

26: 8 when he had been there a long t, 3117

29: 7 neither is it t that the cattle 6256

34 this t will my husband be joined 6471

30: 33 answer for me in t to come, 43117

31: 10 at the t that the cattle conceived, 6256

38: 1 came to pass at that t, that Judah 12 in process of t the daughter of 27 to pass in the t of her travail, 6256

39: 5 from the t that he had made him 11 it came to pass about this t, that 3117

41: 5 he slept and dreamed the second t.

43: 10 we had returned this second t.

43: 10 we had returned this second t.

47: 29 the t drew nigh that Israel must 117

Ex 2: 23 it came to pass in process of t.

8: 32 hardened his heart at this t also, 6471

9: 5 And the Lord appointed a set t.

14 will at this t send all my plagues 6471

18 to morrow about his t I will cause 6256

27 unto them, I have sinned this t: 6471

13: 14 thy son asketh thee in t to come, 4279

21: 19 he shall pay for the loss of his t. 7674

29 push with his horn in t past, 8543,8032

36 hath used to push in t past,

23: 15 in the t appointed of the month

34: 15 the ring t and in haryest thou shalt
```

Fig 3

As early as Genesis 2:4 we see yowm in the singular with an attached infinitive used to indicate an extended period of time. Strong's does not show this since the King James Versions retain the translation of day, but other translations recognize that in this case yowm refers to the time of the entire creation of the heavens and earth as recognized by the The Bible: An American Translation and others, "At the time when God made the earth and the heavens." See Fig 4 below (remember to read Hebrew from right to left).

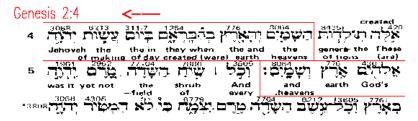


Fig4

How about evening ('ereb #6153) and morning (boqer #1242), can they be associated with a long time period? They appear in this order only a limited number of times in the Scriptures. In Genesis 1 of course, and a couple of times in connection with Aaron in the tabernacle from evening to morning (Exodus 17:21 and Leviticus 24:3), and once in Psalms (55:17; Evening, and morning, and at noon, ...), and twice in the eighth chapter of Daniel as shown in Fig. 5 below. (Remember to read the Hebrew from right to left.)

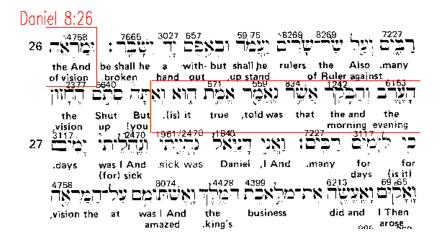


Fig5

In this case evening and morning are associated with a "vision" that definitely covers many years. And the best literal translation would seem to be, "And the vision of the evening and the morning that was told, true it is.", even though some translations do us "evenings and mornings". The word evenings appears only once in the King James Version, and not from 'ereb, but from 'arabah (#6160) and the word mornings never occurs. And the above is the only other place that 'ereb and boger occur in combination with yowm. Here is Young's Literal Translation;

8:26 "And the appearance of the evening and of the morning, that is told, is true; and thou, hide thou the vision, for it is after many days."

And also 'ereb and boqer appear in Daniel 8:14, but without yowm, and in this case the singular words are in connection with a very long time period per Young's Literal Translation;

8:14 "And he saith unto me, Till evening -- morning two thousand and three hundred, then is the holy place declared right."

And the Septuagint, an early translation of the Hebrew Scriptures into Greek adds the word days.

"14 And he said to him, Evening and morning there shall be two thousand and four hundred days; and then the sanctuary shall be cleansed."

And in his commentary on the Book of Daniel by the early Church Father Jerome (347-420AD) also adds the word days.

"Until the evening and the morning, until two thousand three hundred days; and then the sanctuary shall be cleansed."

And below is a composite comparison of the Hebrew of Genesis 1:5, Daniel 8:14 and Daniel 8:26 utilizing the primary English meanings per James H. Strong for #6153 "dusk" (evening), #1242 "dawn" (morning) and #1961 "exist" (there was).



Fig6

So as we see there are really no evidences else where in the Bible that 'ereb and boqer are "defining words" to yowm as many claim. Instead, it would appear most likely that they are descriptive terms concerning the creation process as described in the preceding verses. Now if one considers the probability that they are descriptive terms evening and morning can refer to the "beginning" with "darkness" and the "ending", with the "light" or a dramatic "dawning light" thus giving us the following.

"And the beginning and the ending were the ____ time."

or

"And the darkness and the light were the ____ time."

or

"And the darkness and the dawning light were the ____ time."

Thus the transfer from darkness to light adds the picture of an improvement or a progression in the state of the creation process with each time phase. There is also a figurative translation of boqer as **"of bright joy after night of distress"** per The Brown-Driver-Briggs Hebrew and English Lexicon.

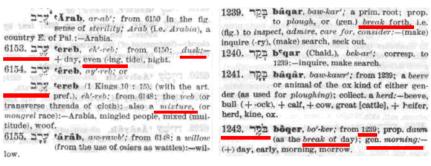


Fig 7

If we use the more basic meanings of the words per the figure above, where evening is called 'ereb because when the sun goes down, vision becomes blurry and disordered and with the break of day it clears. Thus we have;

And the mixing and the breaking forth were the ____ time.

Which has caused some to propose.

"And from chaos/disorder to order, the ____ time."

Therefore the reader can possibly chose from any of the above, which ever seems to connect with them the most. Referring back to Fig 1 from Strong's, you will note that "age" is also a valid translation for yowm, but the authors have used "time" or "phase" since these are our preference.

APPENDIX

Through out history there have always been a small minority of linguists who have maintained that Hebrew was the mother language from which all languages originated. Needless to say they have been ignored by the secular linguists and also most Christians. But there remains today a number of these linguists. One of them is Isaac E. Mozeson graduate from Yeshiva College. Fig 11 that follows is an extract from his book "The Word" published by Shapolsky Publishers in 1989.

While the Hebrew letter Yod 'Y' is more likely to take an I/i in Greek, the Yod takes an A in AEON as well as in AGONY. Any theological agony over the geological age of the earth is unneccessary, as איים 'YOM ("day"—Genesis 1:5) is better translated as AEON (an age). איים 'YOM is the term used in phrases like "ancient times" and "the Middle Ages." Juma is a week in Swahili; איים 'YŌM can infer any period of time.

Fig11

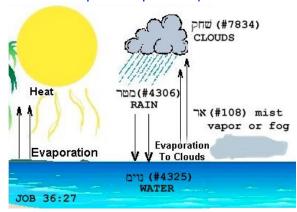
While it is often difficult for the amateur to recognize the origin of English words from the Hebrew mother tongue because the two languages seem to be so different. However, the connection between aeon or eon and yom (Strong's yowm) is not so difficult to understand since the sounds are very similar. Therefore, the translation of yowm in the Genesis 1 passages to aeon is also a good choice. We did not use this choice in the body of our discussion since eon or aeon do not appear in the King James Versions and Strong's.

Genesis 2:5 to 3:24

5 And every shrub of the field was not yet on the earth, and every plant of the field had not yet sprung up, for Jehovah God had not caused it to rain upon the earth, and there was no man to till (farm) the ground.
6 But there went up from the earth a mist (vapor, fog, streams) and watered all the face of the ground.

Job 36:27 For He draws up the drops of water; they distill rain into mist (vapor, same Hebrew word as in verse 6 above),

28 which the clouds pour down and drop on man plentifully.



7 And Jehovah God formed man of the elements of the soil, and breathed into his nostrils the breath of life; and man became a living soul.

Psalms 8:4 what is man that You are mindful of him, and the son of man, that You visit him? 5 For You have made him lack a little from God, and have crowned him with glory and honor.

8 And Jehovah God had planted a garden eastward in Eden. And there He put the man whom He had formed. 9 And out of the ground Jehovah God caused to sprout every tree that is pleasant to the sight, and good for food. The tree of life also was in the middle of the garden, and the tree of knowledge of good and bad.

"The great majority of the cultivated plants of the world trace their origin to Asia. Out of 640 important cultivated plants, about 500 originated in Southern Asia. In Asia alone we have established five of the principle regions of cultivated plants.... The fifth region of origin in Asia is the Southwestern Asiatic centre and includes Asia Minor, Trans-Caucasia, Iran and Western Turkmenistan. This region is remarkable, first of all, for its richness in numbers of species of wheat resistant to different diseases...There is no doubt that Armenia is the chief home of cultivated wheat. Asia Minor and Trans-Caucasia gave origin to rye which is represented here by a great number of varieties and species...."

10 And a river went out of Eden to water the garden. And from there was the source of four head waters.

11 The name of the first is Pishon (Pizhun, Uizhun, the modern Qezel Uzun, flows down from the mountains of Kurdistan and empties into the southern basin of the Caspian Sea.); that is it which surrounds all the land of Havilah, where there is gold.

12 And the gold of that land is good. There is bdellium and the onyx stone.

13 And the name of the second river is Gihon (Gaihun-Aras, also known as Araks, Arax, Araxi, Araxes, Araz, or Yeraskh); it is the one that surrounds the whole land of Cush (Not Ethiopia, but the land of the Cushites before they migrated from the area of Eden.).

14 And the name of the third river is Hiddekel (Which is Hebrew for Sumerian Idiglat from which the Greek Tigris derives.) it is that which goes toward the east of Assyria. And the fourth river is Perath (Which is simply the Hebrew version of Arabic Firat and Greek Euphrates.).



see http://www.ramsdale.org/dna6.htm

15 And Jehovah God took the man and put him into the garden of Eden to work it and keep it (farm it).
16 And Jehovah God commanded the man, saying, You may freely eat of every tree in the garden,
17 but you shall not eat of the tree of knowledge of good and bad. For in the day (Hebrew YOM) that you eat of it you shall surely die.

God decided to provide a test for mankind to see if they would use their intellectual ability to make independent decisions to follow His instructions or be disobedience!

And here we see another instance where the Hebrew word *YOM* does not mean a 24 hour period, since Adam and Eve did not die within the 24 hour period after their disobedience!

18 And Jehovah God said, It is not good that the man should be alone. I will make a helper suitable for him.

19 And out of the soil Jehovah God had formed every animal of the field and every fowl of the air, and brought them to Adam to see what he would call them. And whatever Adam called each living creature, that was its name.

From the names of the animals that we have listed in the Bible in Hebrew the names are derived from characteristics or behaviors. Such as the serpent from its hissing (nachash #5175), the ant from its bisected form (nmalah #5244), the fox as a burrower (shu'al #7776), the cormorant from casting itself into the sea (shalak #7994), the lion in the sense of violence ('ariy #738), and the hawk from its flashing speed (tachmac #8464). This means Adam had to have had time to observe the behaviors of all of the animals that he named!

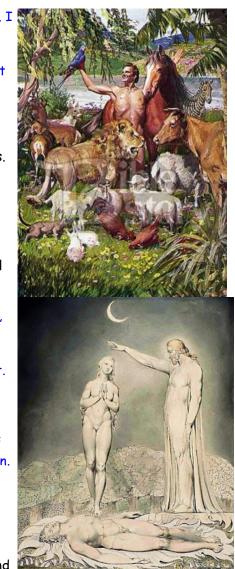
20 And Adam gave names to all the cattle, and to the birds of the air, and to every animal of the field. But there was not found a **suitable helper** for Adam.

21 And Jehovah God caused a deep sleep to fall on Adam, and he slept. And He took from his side, and closed up the flesh underneath.
22 And Jehovah God made the flesh (which He had taken from the man) into a woman. And He brought her to the man.

23 And Adam said, This is now (at last) bone of my bones and flesh of my flesh. She shall be called Woman because she was taken out of man.

24 Therefore shall a man leave his father and his mother, and shall cleave to his wife and they shall be one flesh.

It would appear that as Adam observed and named all of the animals he observed the male to female relationships they had and



that there was yet no suitable mate for him and then when God provided the woman he expressed his satisfaction with what he had been given. To be blunt about it, some of the female animals could have provided a measure of physical sexual pleasure, but not the satisfaction of a companion that was of his intellectual equal. She was not just a clone of Adam, scientific tests have shown that there are many subtle differences in the way the brains from men and women process language, information, emotion, cognition, etc.. Women are better than men in human relations, recognizing emotional overtones in others and in language, emotional and artistic expressiveness, esthetic appreciation, verbal language and carrying out detailed and pre-planned tasks. For example, women generally can recall lists of words or paragraphs of text better than men. The Hebrew words "'exer neged" have been translated as "help meet for him", "a helper correspondent to himself", "helper - as his counterpart", "help to be a companion for him", "helper suited to him", "mate of his own kind", "suitable helper, completing him".

25 And they were both naked, the man and his wife; and they were not ashamed.

Having not yet exercised their independent choice of disobedience they are at this time still as innocent as animals.

Gen 3:1 Now the hissing creature (serpent) was more cunning than any beast of the field which Jehovah God had made. And he challenged the woman, Is it so that God has said, You shall not eat of every tree of the garden?

The exact species indicated is unknown even though many traditions identify it as the snake. Isaiah 27:1 " the sea-monster, the darting serpent, the seamonster, that twisting serpent;" for the description of leviathan using the same Hebrew word as used here.

2 And the woman expressed to the serpent, We may eat of the fruit of the trees of the garden.

3 But of the fruit of the tree which is in the middle of the garden, God has said, You shall not eat of it, neither shall you touch it, lest you die.

4 And the serpent charged the woman, You shall not surely die,

5 for God knows that in the day you eat of it, then your eyes shall be opened, and you shall be as God, knowing good and bad. (The words of the serpent are confirmed in verse 22 below.)

6 And when the woman saw that the tree was good for food, and that it was pleasing to the eyes, and a tree to be desired to make wise, she took of its fruit, and ate. She also gave to her husband with her, and he ate.

How did Eve see that the tree was good for food and desired to make wise, these are not things that one sees by just looking at the tree! Thus it would appear that most probably she saw the serpent actually eating of the fruit and surmised that since the serpent was most cunning that it was due to the fruit and it was not poisonous since he could safely eat it. Poor Adam, he had a big dilemma, if he did not also eat of the fruit he would not undergo the same change that Eve had from eating the fruit and would probably then lose this lovely new companion!

7 And the eyes of both of them were opened. And they knew that they were naked. And they sewed fig leaves together and made girdles for themselves.

8 And they heard the voice of Jehovah God walking in the garden in the cool of the day. And Adam and his wife hid themselves from the presence of Jehovah God in the middle of the trees of the garden.

The went from having a close relationship to God to hiding in the bushes!



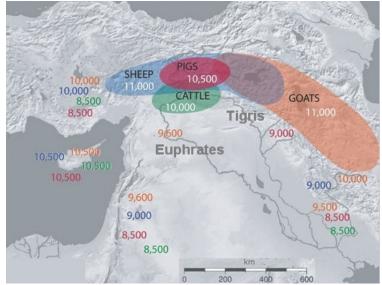


- 9 And Jehovah God called to Adam and said to him, Where are you?
- 10 And he said, I heard Your voice in the garden, and I was afraid, because I am naked, and I hid myself.
- 11 And He said, Who told you that you were naked? Have you eaten of the tree which I commanded you that you should not eat?
- 12 And the man said, The woman whom You gave to be with me, she gave me of the tree, and I ate.
- 13 And Jehovah God said to the woman, What is this you have done? And the woman said, The hissing creature beguiled me, and I ate.
- 14 And Jehovah God said to the hissing creature, Because you have done this you are cursed more than all cattle, and more than every animal of the field. You shall go upon your belly, and you shall eat rubbish all the days of your life.
- 15 And I will put enmity between you and the woman, and between your seed and her Seed; He will bruise your head, and you shall bruise His heel.
- 16 To the woman He said, I will greatly increase your sorrow and your conception. In pain you shall bear sons, and your desire shall be toward your husband, and he shall rule over you.
- 17 And to Adam He said, Because you have listened to the voice of your wife and have eaten of the tree, of which I commanded you, saying, You shall not eat of it! The ground is cursed for your sake. In pain shall you eat of it all the days of your life.
- 18 It shall also bring forth thorns and thistles to you, and you shall eat the herb of the field.
- 19 In the sweat of your face you shall eat bread (grain) until you return to the ground, for out of it you were taken. For dust you are, and to dust you shall return.

The promised death sentence is pronounced on disobedient mankind! Large scale farming originated and spread out from just to the west of the land of Eden about 12,000 years ago. The migration from Eden was first to the west per Genesis 11:2 "as they traveled from the east".

- 20 And Adam called his wife's name Eve, because she became the mother of all living.
- 21 And for Adam and his wife Jehovah God made coats of skins, and clothed them.
- 22 And Jehovah God said, Behold, the man has become as one of Us, to know good and bad. And now, lest he put forth his hand and take also of the tree of life, and eat, and live forever,
- 23 therefore Jehovah God sent him out from the garden of Eden to till the ground (farm) from which he had been taken.

Large scale farming and animal domestication developed at the same time. Genesis 4:2 And Abel was a keeper of sheep, but Cain was a tiller of the ground.



"How the First Farmers Colonized the Mediterranean" the New York Times August 11,2008

24 And He drove out the man. And He placed cherubs at the east of the garden of Eden, and a flaming sword which turned every way, to guard the way to the tree of life.



Psalms 8:1-9 (A Psalm of David) O Jehovah our Lord, how excellent is Your name in all the earth! You have set Your glory above the heavens!

- 2 Out of the mouths of babes and sucklings You have ordained strength, because of ones vexing You, to cause the enemy and the avenger to cease.
- 3 When I look at Your heavens, the work of Your fingers, the moon and the stars which You have established:
- 4 what is man that You are mindful of him, and the son of man, that You visit him?
- 5 For You have made him lack a little from God, and have crowned him with glory and honor.
- 6 You made him rule over the works of Your hands; You have put all things under his feet:
- 7 all sheep and oxen, yes, and the beasts of the field;
- 8 the birds of the heavens, and the fish of the sea, and all that pass through the paths of the seas.
- 9 O Jehovah, our Lord, how excellent is Your name in all the earth!

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