

Noah's Ark and Early Man Seminar Works Cited

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The following quotes and citations are a small sampling of the various scientific journals, books, articles, and sources that deal with the Genesis Flood, fossil men, and Biblical creationism. They can be used to lend support to many Biblical concepts as outlined in the book of Genesis. These articles deal with catastrophism, the veracity of the flood account, Noah's Ark, the philosophy of evolution, *Australopithecus*, *Homo erectus*, *Homo neanderthalensis*, *Homo sapiens*, and many other subjects.

The vast majority have been written by evolutionists. They are reproduced here to show that even when we accept the evolutionary dates and relationships evolution does not occur and the Biblical record is a better explanation of our origins.

They have been arranged in alphabetical order in each section. Included after each citation is a short description of its pertinence. Text from the articles is surrounded by quotes and underlining has emphasized some of the more important quotes.

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Catastrophism

Aharonian FA. *et al.* High-energy particle acceleration in the shell of a supernova remnant. *Nature*. 432:75-77. 2004.

This paper shows that the supernova RX J1713.7—3946 and its associated supernova remnant shell (SNR) can be directly tied to various cosmic ray showers that occur in the Earth's atmosphere. This is the first direct evidence that SNR accelerate atomic particles causing cosmic rays, which then strike the earth. This SNR is an ever-expanding shell of super fast and highly charged particles. The earth's bombardment by these particles would affect the earth, man, biological life, and the various chemical processes that take place on it (see [Aschenbach 1995](#) and [Brakenridge 1981](#)).

Abstract—"A significant fraction of the energy density of the interstellar medium is in the form of high-energy charged particles (cosmic rays). The origin of these particles remains uncertain. Although it is generally accepted that the only sources capable of supplying the energy required to accelerate the bulk of Galactic cosmic rays are supernova explosions, and even though the mechanism of particle acceleration in expanding supernova remnant (SNR) shocks is thought to be well understood theoretically, unequivocal evidence for the production of high-energy particles in supernova shells has proven remarkably hard to find. Here we report on observations of the SNR RX J1713.723946 (G347.320.5), which was discovered by ROSAT in the X-ray spectrum and later claimed as a source of high-energy γ -rays of TeV energies ($1 \text{ TeV} = 10^{12} \text{ eV}$). We present a TeV γ -ray image of the SNR: the spatially resolved remnant has a shell morphology similar to that seen in X-rays, which demonstrates that very high-energy particles are accelerated there. The energy spectrum indicates efficient acceleration of charged particles to energies beyond 100 TeV, consistent with current ideas of particle acceleration in young SNR shocks."

Alvarez L. Alvarez W. Asaro F. Michel HV. Extraterrestrial cause for the Cretaceous-Tertiary extinction. *Science*. 208:4448:1095-1108. 1980.

Proposes that the Earth was struck by a large astral body. This caused the Cretaceous-Tertiary extinctions. Hypothesizes that this led to the extinction of the dinosaurs about 65 million years ago.

Aschenbach B. Egger R. Trümper J. Discovery of explosion fragments outside the Vela supernova remnant shock-wave boundary. *Nature*. 373:587-90. 1995.

Lyne AG. *et al.* Very low braking index for the Vela pulsar. *Nature*. 381:497-98. 1996.

Erlykin AD. Wolfendale AW. Spectral features and masses in the PeV region. XII International Symposium on Very High Energy Cosmic Ray Interactions, CERN, Geneva, 15-19 July 2002.

Erlykin AD. Wolfendale AW. High-energy cosmic gamma rays from a 'single source.' *Journal of Physics G: Nuclear and Particle Physics*. 29:4:718-28. 2003.

A supernova explosion sends a shock wave of cosmic rays, x-rays, and other electromagnetic particles through space. This shell of ever expanding particles and energy is called a supernova remnant shell (SNR). The SNR would affect the rate of many radiometric processes as it struck the earth. If the earth was in a state of chaos as described in Genesis 1:1-2 it may not have had an atmosphere. Without the protective shielding of the atmosphere the earth would have been

pummeled by cosmic rays. This would affect the decay rates of the radioactive isotopes used in the various radiometric dating schemes. At a later date if the earth had life on its surface as the SNR arrived the increase in radiation would affect many ecosystems ([Brakenridge 1981](#)) in the earth and may have been partially responsible for the extinctions of the pre-Adamic world. With a more recent SNR from a closer supernova the resulting cosmic ray bombardment may have been responsible for the lessening of the long ages immediately after the flood. The exponential decay curve of the ages assigned the patriarchs indicates that the reduction was environmental.

The study by Erlykin 2003 indeed indicates that we are actually just inside an ever-expanding SNR. This source of this SNR is a local and recent supernova explosion. This much higher level of cosmic ray flux and the large size of the SNR as it fills a large part of the sky makes it difficult to distinguish from the much smaller background cosmic ray level and therefore it has not been noticed.

Aschenbach 1995—"Furthermore, the angular offset of the objects' origin divided by the proper motion velocity of $0.049 \text{ arcsec yr}^{-1}$ gives an independently determined age of the Vela SNR of $t = 18,000 \pm 9,000$ years.

Lyne 1996—"...the age derived for the Vela is 22-29 kyr..."

Erlykin 2002 Abstract—"Concerning our location with respect to the SNR shell, the analysis suggests that we are close to it—probably just inside."

Erlykin 2003—" Abstract Some six years ago, we...proposed the 'single-source (SS) model' in which a local, recent supernova remnant (SNR) was responsible for the 'knee' in the cosmic-ray (CR) energy spectrum...which drew attention to a possible gamma-ray signature of this local remnant, we now study the situation for the local source and conclude that...the non-observation of this remnant is understandable—at least using our SNR model. It is due to the fact that this SNR, being local, develops in the local hot interstellar medium (HISM) with its low density of gas and also being nearby it will be an extended source occupying up to 40% of the sky and thus indistinguishable from the background."

Austin, SA. Mount St. Helens and catastrophism. Vital Articles on Science/Creation. Institute for Creation Research. July 1986.

Excellent journal article showing how strata can be formed very quickly. Shows how more than 40 ft of strata have been formed very quickly in a relatively short period of time. Details how coal and petrified forests can be formed very quickly.

Barley ME. Pikard AL. and Sylvester PJ. Emplacement of a large igneous province as a possible cause of banded iron formation 2.45 billion years ago. *Nature*. 385:55-58. 1997.

This article shows that large sedimentary deposits of banded iron formations (BIF) were produced by vast oceanic upheavals and large scale volcanic eruptions. This runs counter to the geologic assumption that the early earth was only affected by slow and gentle geologic forces. This supports the Biblical concept that the early pre-Adamic earth was sculpted by catastrophic forces. The particular deposit studied in this article is more than 30,000 cubic kilometers in size and covers a large part of Australia. These formations are sandwiched between oceanic magma deposits. These BIFs are located worldwide.

Abstract—"Thus the largest Palaeoproterozoic BIFs, rather than simply reflecting a gradual increase in the oxygen content of the oceans during a period of tectonic quiescence, are more likely to have formed as a result of an increased supply of suboxic iron and silica rich sea water

upwelling onto continental shelves during a pulse (or pulses) of increased submarine magmatic and hydrothermal activity. "

Becker L. *et al.* Impact event at the Permian-Triassic Boundary: Evidence from extraterrestrial noble gases in fullerenes. *Science*. 291:1530-33. 2001.

Abstract—"The Permian-Triassic boundary (PTB) event, which occurred about 251.4 million years ago, is marked by the most severe mass extinction in the geologic record. Recent studies of some PTB sites indicate that the extinctions occurred very abruptly, consistent with a catastrophic, possibly extraterrestrial cause. Fullerenes (C₆₀ to C₂₀₀) from sediments at the PTB contained trapped helium and argon with isotope ratios similar to the planetary component of carbonaceous chondrites. These data imply that an impact event (asteroidal or cometary) accompanied the extinction, as was the case for the Cretaceous-Tertiary extinction event about 65 million years ago."

"This, it would appear that ET (extraterrestrial) fullerenes were delivered to Earth at the PTB, possibly related to a cometary or asteroidal impact event. Based on the measured ³He content for the PTB and Murchison fullerenes, the estimated size of the bolide is 9 ± 3 kilometer or comparable to the KT Chicxulub impactor. Such an event could have caused the severe end-Permian mass extinction."

Beckman JE. Mahoney TJ. The Maunder minimum and climate change: have historical records aided current research? *Library and Information Services in Astronomy III*. (ed) U. Grothkopf. Astronomical Society of the Pacific. ASP Conference Series. 153:212-217. 1998.

Walter Maunder noted from historical records that there had been a decrease in sunspot activity from 1645-1715, this has been named the Maunder Minimum. This corresponded to what has been termed the "Little Ice Age" because of the drop in temperature. During the Little Ice Age the Thames River in London and the Lagoon of Venice froze regularly. This article reveals that historical record indeed showed that there had been a decrease in sunspot activity during this period. In historical records Maunder found 50 sunspots in one 30-year period between 1676-1699. Normally a 30-year time period will have about 40-50,000 sunspots reported. This article also lends support that "global warming" and ¹⁴C levels may in large part be driven by changes in the sun's solar and magnetic output ([Eddy 1976](#) and [Reiter 2000](#)).

"It was largely based on the work of these observers, supplemented by others in Italy, that Spörer (1887) constructed a table of all the sunspots noted between 1672 and 1699. He found less than 50, whereas in any typical 30-year interval during the past hundred years there have been between 40,000 and 50,000 spots reported. As well as the low levels of activity before 1715, there are well attested reports, notably by La Hire in France and Derham in England, of the surge in sunspot activity which occurred during and after that year, in which sunspots returned to the solar surface in the quantities which we take to be normal today. Indirect supporting evidence for the absence of activity in the late 17th century, and of its resurgence in the early 18th century, comes from the record of auroral sightings."

"While there has not been great resistance to Eddy's arguments for a lull in solar magnetic activity during the Maunder Minimum, one of the main reasons why his ideas caught the imagination is more contentious. He claimed that the Maunder Minimum coincided in time with an era of colder weather, and that by implication the absence of magnetic activity was accompanied by a net fall in the total radiative output of the Sun. An implicit corollary is that in the intervening period the radiative output has been increasing, with a consequent warming of the Earth. This basic idea has been taken up by a section of the solar physics community, and a good recent summary of the evidence for the proposition that solar variability is an agent, if not the

main agent, of the perceived recent climate change associated with global warming, is given in Hoyt & Schatten."

Born SM. Ritter DF. Modern terrace development near Pyramid Lake, Nevada, and its geologic implications. *Peterological Society of America Bulletin*. 81:1233-42. 1970.

Explains how terrace development in this area is attributable to varying sea levels or receding and rising water.

Bottke Jr. WF. Jedicke R. Morbidelli A. Jean-Marc P. Gladman B. Understanding the distribution of near-earth asteroids. *Science*. 288:2190-94. 2000.

There are approximately 750 asteroids larger than 1 km in diameter. If any of these bodies hit the earth they would cause global destruction. "Evidence from the lunar and terrestrial crater record indicates that this population has bombarded Earth over the age of the solar system, and related geologic evidence indicates that the collision of a multi-kilometer asteroid with Earth can wreak regional-to-global devastation on our biosphere."

Brakenridge GR. Terrestrial Paleoenvironmental effects of a late Quaternary-age supernova. *Icarus*. 46:81-93. 1981.

Indicates that the geological recent explosion of the Vela supernova (PSR-0833-45) affected the earth's ecosystems. These effects included an increase in C14 production, a decrease in atmospheric ozone, a cooling of the climate and more nitrogen production. Also includes a chart showing the strength and age of recent supernova explosions ([Aschenbach 1995](#)).

Abstract—"A chronology of the γ and X radiation incident upon the Earth from discrete supernova occurrences is desirable for two reasons: (1) large but short-lived γ flashes should result in episodically increased atmospheric ^{14}C production, and thus affect the ^{14}C dating method, and (2) modeling of the other atmospheric effects to be expected from nearby supernovas indicates their possible importance as independent variables capable of causing climatic or other environmental changes. Presented here is a preliminary chronology of the larger inferred radiation events experienced by the Earth during the past 15,000 years. This chronology illustrates the possible importance of the Vela optical-, radio-, and X-emitting supernova remnant (G263.9-3.3), and its associated pulsar (PSR-0833-45), which together record an unusually close ($d = 500$ pc) supernova occurring sometime between 11,300 and 8,400 years B.P. The predicted terrestrial effects of a 10^{49} — 10^{50} -erg γ -and X-emitting supernova at this distance include short-term increases in ^{14}C activity (+ 3 to + 6%), increases in aquatic productivity at some localities, and a brief global cooling. Such effects appear to be documented by many late Quaternary paleoenvironmental records dated between 11,000 and 10,000 ^{14}C yr B.P."

Bray JR. Volcanic triggering of glaciation. *Nature*. 260:414-15. 1976.

Bray JR. Pleistocene volcanism and glacial initiation. *Science*. 197:251-54. 1977.

Massive eruptions during the Pleistocene may have caused the ice age.

Brown P. Spalding RE. *et al.* The flux of small near-Earth objects colliding with the Earth. *Nature*. 420. 420:294-296. 2002.

"Using the best fit of these satellite data and extrapolating the power law to higher energies, we find that the Earth is struck by an object with the energy of Tunguska (assumed to be 10 Mton) every 1,000 +200/-800 years (with an allowed range from 400 to 1,800 years on the basis of our

most extreme assumptions for luminous efficiency). We estimate that the Earth is on average struck annually by an object of energy ~5 kton (with a possible range of 2–10 kton), and struck each month by an object with 0.3 kton of energy. Every ten years, an object of energy ~50 kton strikes Earth."

Chapman CR. Morrison D. Impacts on the earth by asteroids and comets: assessing the hazard. *Nature*. 367:33-40, 1994.

"There is a 1-in-10,000 chance that a large (~2-km diameter) asteroid or comet will collide with the Earth during the next century, disrupting the ecosphere and killing a large fraction of the world's population."

Clark DH. McCrea WH. Stephenson FR. Frequency of nearby supernovae and climatic and biological catastrophes. *Nature*. 265:318-19. 1977.

The exploding of a nearby supernova would have catastrophic consequences for the earth. The cosmic ray intensity would increase by 100 times for hundreds of years. The ozone layer would be destroyed. Large amounts of ultra-violet radiation would reach the earth's surface. This would lead to a 30 fold increase in background surface radiation which would cause increased skin cancer and an over production of vitamin D which would be toxic. This would lead to worldwide species extinctions and a possible ice age.

Dachille, F. Axis changes in the Earth from large meteorite collision: Letters to the Editor. *Nature*. 198:176. 1963.

Gives statistical evidence for the change in the Earth's axis caused by the impact of a large meteorite.

De Laubenfels MW. Dinosaur extinction: one more hypothesis. *Journal of Paleontology*. 30:1:207-8. 1956.

Noting the destruction that the meteorite impact in Siberia had in 1908 it is suggested that a heat wave from an impacting meteorite destroyed the dinosaurs.

Discover Magazine. Paleozoic Pockmarks. 17:7. July 1996.

"Splayed across southern Illinois, Missouri, and eastern Kansas are eight large, gently sloping depressions, 2 to 10 miles wide and an average of 60 miles apart. Although the structures have been reliably dated--they are some 310 million to 330 million years old--no one has been quite sure how they formed...Michael Rampino...says the features are the eroded traces of a string of craters formed when pieces of a comet or asteroid broke up and slammed into our planet...According to Rampino's calculations, if a comet fragmented within a few million miles of Earth, its pieces would have had time to drift apart enough to strike the Midwest at 60-mile intervals--and at 50,000 miles per hour."

"Rampino says the craters date from a time when a lot of marine life mysteriously disappeared. Although each of the comet fragments would have been less than one-fifteenth the estimated diameter of the body that may have wiped out the dinosaurs, the impacts might still be linked to the marine extinctions. This Shoemaker-Levy occurrence on Jupiter shows people that they should be looking for chains of impact structures--that these chains might actually be relatively common, says Rampino. They're on the moon, they're on the moons of Jupiter, and here we think we see one on Earth. Are there more? There may be."

Eddy JA. The Maunder Minimum. *Science*. 192:4245:1189-1202. 1976.

During the Maunder Minimum (1645-1715) practically no sunspots occurred. This dearth of sunspots led to a period of extreme cold weather known as the "Little Ice Age" (1400-1-1850). Since sunspots are a time of reduced solar output this greatly affected the climate of the earth by causing global cooling. Also reduced sunspots meant the sun was less magnetically active, the Interplanetary Magnetic Field (IMF) was reduced which meant that higher numbers of cosmic rays would be able to reach the earth increasing ^{14}C production ([Beckman 1998](#) and [Reiter 2000](#)).

"The possibility that sunspots sharply dropped in number before 1700 was pointed out rather clearly by two well known solar astronomers in the late 19th century. In papers published in 1887 and 1889 the German astronomer Gustav Spörer called attention to a 70-year period, ending about 1716, when there was a remarkable interruption in the ordinary course of the sunspots cycle and an almost total absence of spots...The first major anomaly found in the early studies of ^{14}C history was a marked and prolonged increase which reached its maximum between about 1650 and 1700, in remarkable agreement in sense and date with the Maunder Minimum."

Faux CM Padian K. The opisthotonic posture of vertebrate skeletons: postmortem contraction or death throes? *Paleobiology*. 33:2:201-26. 2007.

This paper indicates that the posture of many fossilized animals reveals the cause of death. Many fossilized animals have been found in a classic opisthotonic posture and this indicates that asphyxiation or drowning was the most likely cause of death.

Abstract.—"An extreme, dorsally hyperextended posture of the spine (opisthotonus), characterized by the skull and neck recurved over the back, and with strong extension of the tail, is observed in many well-preserved, articulated amniote skeletons (birds and other dinosaurs, pterosaurs, and at least placental mammals)...That is, the opisthotonic posture is the result of "death throes," not postmortem processes, and individuals so afflicted assumed the posture before death, not afterward. The clinical literature has long recognized that such afflicted individuals perish from asphyxiation, lack of nourishment or essential nutrients, environmental toxins, or viral infections, among other causes. Accepting the actual causes of the opisthotonic posture as perimortem and not postmortem provides insights into the causes of death of fossilized specimens, and also revises interpretations of paleoenvironmental conditions of many fossil deposits. The opisthotonic posture tells us more about the circumstances surrounding death than about what happened after death. ...It seems important that the opisthotonic posture has been observed extensively only in clades of animals that are known or thought to have high basal metabolic rates: hypoxia and related diseases would be most likely to affect animals with high oxygen use rates."

Fritz, WJ. Reinterpretation of the depositional environment of the Yellowstone "fossil forests." *Geology*. 8:309-13. 1980.

Shows how the Yellowstone petrified forest were probably laid down by a massive flood. Includes evidence applicable to quick strata formation. The present day geology of Mt. St. Helens was caused by massive floods that were a result of volcanic activity ([Austin 1986](#)). Mt. St. Helens is presently causing the formation of petrified forest much like those in Yellowstone.

Hunt C. Catastrophic termination of the last Wisconsin ice advance, observations in Alberta and Idaho. *Bulletin of Canadian Petroleum Geology*. 25:3:456-57. 1977.

Invokes continent wide flooding to account for the existence of erratics in Alberta and the northwestern US. Evidence of a large portion of the US covered by seawater. Proposes that the gravity of a large passing celestial body provided the mechanics and tidal action.

"Violent earthquaking would have been the first event, perhaps due to proximal passage of a cosmic body....Duration might have resulted from slow passage of a large, distant, cosmic body. Repetition might have resulted from a smaller body returning periodically...A more difficult stricture arising from the evidence is the need for a *duration* sufficient to allow development of beaches and deposition of tick silt beds. Required would be either a very slowly passing, perhaps large and distant, cosmic mass, or a smaller, faster-moving mass that traveled in comet-like fashion within the solar system on an elliptical orbit."

Hsu KJ. Terrestrial catastrophe caused by cometary impact at the end of the Cretaceous. *Nature*. 285:210-13. 1980.

"Evidence is presented indicating that the extinction, at the end of the Cretaceous, of large terrestrial animals was caused by atmospheric heating during a cometary impact and that the extinction of calcareous marine plankton was a consequence of poisoning by cyanide released by the fallen comet and of a catastrophic rise in calcite-compensation depth in the oceans after the detoxification of the cyanide."

Johnson KR. Forests frozen in time. *Nature*. 447:786-87. 2007.

About 4 square mile (1,000 hectares) was dropped into the ocean and preserved in less than two months. The submerged forest was found in the ceiling and tunnels of a Pennsylvanian coalmine.

"Rapid burial can result from various mechanisms. In the case of the Illinois forest, which grew in a coastal mire, local tectonic subsidence dropped the forest floor to sea level quickly enough for the plants to be preserved in place. The rate of this type of subsidence is difficult to measure, but DiMichele *et al.* argue that it must have occurred within two months to provide the quality of preservation seen in the mine."

Keller G. et al., Chicxulub impact predates the K-T boundary mass extinction. *Proceedings of the National Academy of Sciences*. 101:11:3753-58. 2004.

This paper shows that the earth probably suffered many astral impacts during the Cretaceous-Tertiary time period.

Abstract—"Since the early 1990s the Chicxulub crater on Yucatan, Mexico, has been hailed as the smoking gun that proves the hypothesis that an asteroid killed the dinosaurs and caused the mass extinction of many other organisms at the Cretaceous-Tertiary (K-T) boundary 65 million years ago. Here, we report evidence from a previously uninvestigated core, Yaxcopoil-1, drilled within the Chicxulub crater, indicating that this impact predated the K-T boundary by $\approx 300,000$ years and thus did not cause the end-Cretaceous mass extinction as commonly believed."

"The pre-K-T age of the Chicxulub impact lends support to a multiple-impact scenario with impacts during the Late Maastrichtian, at ≈ 300 ky before the K-T boundary and at the K-T boundary."

"The Late Maastrichtian Chicxulub impact coincided with major Deccan volcanism, greenhouse warming (65.4– 65.2 million years ago), and a gradual decrease in species diversity during the last 700 ky before the K-T boundary, but no major species extinctions...The mass extinction coincided with the K-T boundary impact and Deccan volcanism and eliminated all tropical and subtropical species, all of which were rare by that time with a combined relative abundance averaging <15% of the total foraminiferal population. This finding suggests that the K-T boundary impact (and volcanism) may have been the straw that broke the camel's back, rather than the catastrophic kill of a healthy thriving community."

Lippman HE. Frozen mammoths. *Science*. 133:449-50. 1962.

Proposes sudden freezing and catastrophic events for the freezing of hundreds of thousands of mammoths in Siberia and Alaska. The author takes exception to the uniformitarian theory for this phenomena and states..."No gradualistic process can result in the preservation of tens of thousands of tusks and whole individuals, even if they died in the winter. They must have been frozen suddenly."

McLaren DJ. Presidential Address: Time, life, and boundaries. *Journal of Paleontology*. 44:4:801-13. 1970.

"...for it is the sudden disappearance of several unrelated groups being replaced by other unrelated groups that constitutes the main evidence for an external catastrophic event..." Gives evidence for a meteor collision that caused a massive tidal wave causing the extinction of large number terrestrial species. The turbid continental runoff from the tidal wave then caused the extinction of various ocean dwelling species (p. 812).

Mungall JE. Ames DE. Hanley JJ. Geochemical evidence from the Sudbury structure for crustal redistribution by large bolide impacts. *Nature*. 429:546-48. 2004.

Article showing how the earth has been impacted many times by large astral bodies.

"Deformation and melting of the crust during the formation of large impact craters must have been important during the Earth's early evolution, but such processes remain poorly understood. The 1.8-billion-year-old Sudbury structure in Ontario, Canada, is greater than 200 km in diameter and preserves a complete impact section, including shocked basement rocks, an impact melt sheet and fallback material. It has generally been thought that the most voluminous impact melts represent the average composition of the continental crust, but here we show that the melt sheet now preserved as the Sudbury Igneous Complex is derived predominantly from the lower crust. We therefore infer that the hypervelocity impact caused a partial inversion of the compositional layering of the continental crust. Using geochemical data, including platinum-group-element abundances, we also show that the matrix of the overlying clast-laden Onaping Formation represents a mixture of the original surficial sedimentary strata, shock-melted lower crust and the impactor itself."

Napier WM. Clube SVM. A theory of terrestrial catastrophism. *Nature*. 282:455-59. 1979.

Catastrophic impacts of planetoids are caused by the earth passing through the spiral arms of the Milky Way Galaxy, where they tend to collect. These impacts would affect the makeup of the stratosphere. Fine dust would be suspended in the upper atmosphere blocking out sunlight, this would cause the food chains to collapse leading to mass extinctions of large bodied animals. After the atmosphere cleared there would be a drop in the ozone levels, nitric oxide levels in the upper atmosphere would increase, UV radiation levels would increase, and an ice age would commence.

Nero AV. Et al. Distribution of Airborne Radon-222 concentrations in U.S. homes. *Science*. 234:992-997. 1986.

Radon is source of background radiation. The decay of ²²²Radon leads to the emission of alpha particles. Gaseous radon if ingested or breathed is a factor in lung cancer. It has been

estimated that miners and people living in area where radon is concentrated in the soil have a greater than 2% risk of lung cancers. Radon exposure is the second leading cause of death from lung cancers behind smoking. The earth after the flood went through a period of volcanic and earthquake activity, which brought much underground radon to the surface. This has implication for the declining life spans after the flood.

Abstract—"Available dose-response data suggests that an average of 1.5 picocuries per liter contributes about 0.3% lifetime risk of lung cancer and that, in the million homes with the highest concentrations, where annual exposures approximate or exceed those received by underground uranium miners, long-term occupants suffer an added lifetime risk of at least 2%, reaching extraordinary values at the highest concentrations observed."

"...concentrations exceeding 8 pCi/liter, implying an individual lifetime risk greater than approximately 2% to long-term occupants. The occasional home with concentrations exceeding 50 or even 100 pCi/liter causes truly extraordinary risks."

Rampino MR. Ambrose SH. Volcanic winter in the Garden of Eden: the Toba supereruption and the late Pleistocene human population crash. Geological Survey of America. Special paper 345. 71-82. 2000.

The Genesis flood involved large-scale tectonic activity, global cooling (ice age) and near extinction of the human race. All of these factors are supported in this paper.

Abstract—"The Toba eruption (ca. 73,500 B.P., Indonesia) was the largest explosive eruption of the last few hundred thousand years...is predicted to have caused a 'volcanic winter' with possible abrupt regional cooling of up to 15° C (similar to nuclear winter scenarios), and global cooling of 3-5°C (and possibly greater) for several years...Botanical studies and model simulations suggest that the local and regional effects of the predicted post-Toba cooling would have been disastrous for vegetation...Genetic studies indicate that sometime prior to ca. 60,000 yr ago humans suffered a severe population bottleneck (possibly only 3,00—10,000 individual), followed eventually by rapid population increase, technological innovations, and migrations. The climactic effect of the paroxysmal Toba eruption could have cause the bottleneck, and the event may have been a catalyst for the technological innovation and migrations that followed...Some chimpanzee populations appear to have undergone such a bottleneck ca. 70,00-60,000 yr ago."

Rampino MR. Haggerty BM. The "Shiva Hypothesis": impacts, mass extinctions, and the galaxy. Earth, Moon, and Planets. 72:441-60. 1996.

Abstract—"The "Shiva Hypothesis", in which recurrent, cyclical mass extinctions of life on Earth result from impacts of comets or asteroids, provides a possible unification of important processes in astrophysics, planetary geology, and the history of life. Collision with Earth-crossing asteroids and comets \geq a few km in diameter are calculated to produce widespread environmental disasters (dust clouds, wildfires), and occur with the proper frequency to account for the record of five major mass extinctions (\geq from 10^8 Mt TNT impacts) and ~ 20 minor mass extinction (from 10^7 - 10^8 Mt impacts) record in the past 540 million years. Recent studies of a number of extinctions show evidence of severe environmental disturbances and mass mortality consistent with the expected after-effects (dust clouds, wildfires) of catastrophic impacts...A cyclical astronomical pacemaker for such pulses of impacts may involve the motions of the Earth through the Milky Way Galaxy." (Mt = mega tons = 1,000,000 tons TNT)

"Most studies have come to the conclusion that the impact of an asteroid or comet ≥ 10 km in diameter (releasing $\geq 10^{24}$ J, 10^8 Mt TNT) would cause a global catastrophe of enormous proportions, and the severe end-Cretaceous crisis seems to have involved an ~ 10 km diameter impactor."

Reid, GC. McAfee JR. Crutzen PJ. Effects of intense stratospheric ionization events. *Nature*. 275:489-92. 1978.

A supernova remnant shell (SNR) is used to explain the mass extinctions of the past. Shows how a SNR would increase cosmic ray levels reaching the earth, (100-1,000 times present level for several hundred years), increase atmospheric nitrogen levels, and deplete the ozone. Believes the Cretaceous-Tertiary (K-T) extinctions were caused by this phenomenon.

Reiter P. From Shakespeare to Defoe: malaria in England in the Little Ice Age. *Emerging Infectious Diseases-Perspectives*. 6:1:1-11. 2000.

This paper shows that malaria was quite common in England and in many other areas during the Little Ice Age. Contrary to popular understanding malaria is commonly spread in cold weather because people are in close physical contact and the mosquito lives in warm dwellings which easily spreads the disease. This article describes from historical records some of the climatic changes that occurred during this time. The Little Ice Age was caused by a decrease in solar output and sunspot activity ([Beckman 1998](#) and [Eddy 1976](#)).

"The impact of this sudden change of climate was dramatic and global. Glaciers advanced rapidly in Greenland, Iceland, Scandinavia, and the Alps. The Arctic pack ice extended so far south that there are six records of Eskimos landing their kayaks in Scotland. Large tracts of land, particularly at higher latitudes and altitudes, had to be abandoned. In many years, snowfall was much heavier than recorded before or since, and the snow lay on the ground for many months longer than it does today. Many springs and summers were outstandingly cold and wet, although there was great variability between years and groups of years. Crop practices throughout Europe had to be altered to adapt to the shortened, less reliable growing season, and there were many years of dearth and famine. Violent storms caused massive flooding and loss of life. Some of these resulted in permanent losses of large tracts of land from the Danish, German, and Dutch coasts. The dramatic cooling was captured in the paintings of the Flemish artist Pieter Bruegel (c. 1525-1569), who initiated a new genre by completing at least seven winter landscapes in 2 years. Climate changes were equally striking in other parts of the world. In Ethiopia and Mauritania, permanent snow was reported on mountain peaks at levels where it does not occur today. Timbuktu, an important city on the trans-Saharan caravan route, was flooded at least 13 times by the Niger River; there are no records of similar flooding before or since. In China, warm weather crops, such as oranges, were abandoned in Kiangsi Province, where they had been grown for centuries. In North America, the early European settlers also reported exceptionally severe winters. For example, in 1607 to 1608 ice persisted on Lake Superior until June."

Simoneit BRT. Lonsdale PF. Hydrothermal petroleum in mineralized mounds at the seabed of Guaymas Basin. *Nature*. 295:198-202. 1982.

"The thermogenic origin of the petroleum-like organic matter in the dredge samples has been confirmed. This is based on the following chemical parameter: (1) presence of gasoline range hydrocarbon (also the odorous compounds); (2) broad distribution of hydrocarbon (hump, C₁₃—C₃₃) and presence of pristane and phytane; and (3) the relative amounts of aromatic/naphthenic (F2) and asphaltic (F3) material versus the aliphatic hydrocarbons (F1). "

This shows that oil (petroleum like hydrocarbons) can be formed very quickly near thermal vents located on the ocean floor.

Spray JG. Kelley SP. Rowley DB. Evidence for a late Triassic multiple impact event on Earth. *Nature*. 392:171-73. 1998.

VanDecar J. Crater row. *Nature*. 392:131. 1998.

Asteroid and comets have bombarded the Earth in the past. These can cause massive global and geologic damage. These articles report on the discovery of a chain of earth craters that were probably formed by a large asteroid that broke up into pieces and left a trail of craters spread out over thousands of miles.

Spray 1998 Abstract—"Evidence for the collision of fragmented comets or asteroids with some of the larger (jovian) planets and their moons is now well established following the dramatic impact of the disrupted comet Shoemaker–Levy 9 with Jupiter in 1994. Collisions by fragmented objects result in multiple impacts that can lead to the formation of linear crater chains, or catenae, on planetary surfaces. Here we present evidence for a multiple impact event that occurred on Earth. Five terrestrial impact structures have been found to possess comparable ages (~214 Myr), coincident with the Norian stage of the Triassic period. These craters are Rochechouart (France), Manicouagan and Saint Martin (Canada), Obolon (Ukraine) and Red Wing (USA). When these impact structures are plotted on a tectonic reconstruction of the North American and Eurasian plates for 214 Myr before present, the three largest structures (Rochechouart, Manicouagan and Saint Martin) are co-latitudinal at 22.88 (within 1.2°, ~110 km), and span 43.58° of palaeolongitude. These structures may thus represent the remains of a crater chain at least 4,462 km long. The Obolon and Red Wing craters, on the other hand, lie on great circles of identical declination with Rochechouart and Saint Martin, respectively. We therefore suggest that the five impact structures were formed at the same time (within hours) during a multiple impact event caused by a fragmented comet or asteroid colliding with Earth.

VanDecar 1998—"The illustration here shows the three main craters in the chain—St Martin, SM; Manicouagan, M; and Rochechouart, R—which line up at constant latitude when the Earth's tectonic plates are reconfigured to their arrangement at the time of the collisions. In 1994, the break-up of comet Shoemaker–Levy 9 by the tidal forces of Jupiter, and the subsequent collision of the fragments with the planet, dramatically showed how such crater chains might be formed. The fact that the craters observed...lie at a constant latitude indicates that the fragmented body that produced them had likewise been captured into an Earth orbit, with the distance between craters giving the angle through which the Earth rotated between impacts.

Ward PD. The greenhouse extinction. *Discover*. 54-58. August 1998.

The earth was once tropical and then because of an overabundance of carbon dioxide the climate changed. This change led to worldwide mass extinctions more than 250 Mya. The author postulates that the extinctions occurred rapidly.

Wetherill GW. Apollo objects. *Scientific American* 240:3:54-65. March 1979.

A study of asteroid like bodies (Apollo objects) that cross the orbit of the earth. Gives locations where craters exist on the earth from past impacts with these bodies. The tidal action of the Genesis flood points to an encounter with the gravity of a celestial body. Past extinctions and catastrophes give evidence of collisions.

Charles Darwin—The Origin of Species

The following quotes all appear in Charles Darwin's book, *the Origin of Species*. They are reprinted here to show that the theory of evolution and natural selection advanced by Darwin is not scientifically correct and is based on faith.

Darwin, Charles. *The Origin of Species* 1859. Random House. New York. 1979.

"For I am well aware that scarcely a single point is discussed in this volume on which facts cannot be adduced, often apparently leading to conclusions directly opposite to those at which I have arrived. A fair result can be obtained only by fully stating and balancing the facts and arguments on both sides of each question; and this cannot possibly be here done." p. 66

"To suppose that the eye, with all its inimitable contrivances for adjusting the focus to different distances, for admitting different amounts of light, and for the correction of spherical and chromatic aberration, could have been formed by natural selection, seems, I freely confess, absurd in the highest possible degree." p. 217

"But I am bound to confess, that, with all my faith in this principle, I should never have anticipated that natural selection could have been efficient in so high a degree,..." p. 262

"One (difficulty), namely the distinctness of specific forms, and their not being blended together by innumerable transitional links, is a very obvious difficulty." p.291

"Why then is not every geological formation and every stratum full of such intermediate links? Geology assuredly does not reveal any such finely graduate organic chain; and this perhaps, is the most obvious and gravest objection which can be urged against my theory. The explanation lies, as I believe in the extreme imperfection of the geological record." p.292

"Geological research ([Raup 1979](#)), though it has added numerous species to existing and extinct genera, and has made the intervals between some few groups less wide than they otherwise would have been yet has done scarcely anything in breaking down the distinction between species, by connecting them together by numerous, fine, intermediate varieties; and this not having been effected, is probably the gravest and most obvious of all the many objections which may be urged against my views." p.307

"*on the sudden appearance of groups of Allied Species in the lowest known fossiliferous strata.* (Subheading chapter 9) There is another *and* allied difficulty, which is much graver, I allude to the manner in which number of species of the same group, suddenly appear in the lowest know fossiliferous rocks...But the difficulty of understanding the absence of vast piles of fossiliferous strata, which on my theory no doubt were somewhere accumulated before the Silurian epoch, is very great The case at present must remain inexplicable; and may be truly urged as a valid argument against the views here entertained." p. 312, 313, 314

"The several difficulties here discussed, namely our not finding in the successive formations infinitely numerous transitional link between the many species which now exist or have existed; the sudden manner in which whole groups of species appear in our European formations; the almost entire absence, as at present known, of fossiliferous formations beneath the Silurian strata, are all undoubtedly of the gravest nature. We see this in the plainest manner by the fact that all the most eminent paleontologists, namely Cuvier, Owen, Agassiz, Barrande, Falconer, Forbes, &c., and all our great geologist, as Lyell, Murchision, Sedgwick, &c., have unanimously, often vehemently, maintained the immutability of the species." p. 315-6

Non-Evolutionary Factors

Cybulski JS. *Homo erectus: a synopsis, some new information, and a chronology.* *Homo erectus Papers in Honor of Davidson Black.* Sigmon BA. Cybulski JS. eds. p. 237-38. University of Toronto Press. Toronto, 1981.

Map showing the location of various *Homo erectus* fossil finds. Almost all the locations are non-costal. Fish supplies Vitamin D. A lack of Vitamin D is responsible for rickets.

Dobson JE. The iodine factor in health and evolution. *The Geographical Review*. 88:1:1-28. 1998.

Amazing paper showing the effect that iodine deficiency disorders (IDD) would have on the Neanderthals. Puts forth the idea that Neanderthal morphology was pathology due to IDD (for an overview of the selenium connection see [Foster 2002](#)).

Abstract—"Iodine is essential for modern humans and may have been essential for Neanderthals as well. Today about 30 percent of the world's population is at risk of iodine deficiency disorders (IDD), 750 million people suffer from goiter, 43 million have IDD—related brain damage and mental retardation, and 5.7 million are afflicted by cretinism, the most severe form of IDD. Distinctive Neanderthal skeletal traits are identical to those of modern humans who suffer from cretinism. Cro-Magnon Venus figurines also exhibit distinctive traits associated with cretinism among modern humans. This new evidence...may account for the differences between Neanderthals and modern humans."

"Specific syndromes of cretinism include Licker-Debre-Semelaigne (KDS) and Brissaud infantilism. KDS is defined as 'large muscle syndrome...Apparent muscular hypertrophy in hypothyroid children [gives] them the 'herculean' (prize-fighter, athletic, or pseudo-athletic) appearance. Associated disorders may include...delayed dentition,...peculiar facies,...and increased muscle mass.'" p. 2

"Cro-Magnons were anatomically modern humans, yet Upper Paleolithic sites from the Pyrenees Mountains to the central Russian plain have yielded hundreds of oddly shaped female statues, known as Venus figurines, most of which date from about 27,000 B.P. to about 22,000 B.P. It is commonly believed that these artifacts represent a prototypical Earth Mother or Earth Goddess. Most are obese, with pendulous breasts and large bellies that are assumed to indicate pregnancy. Genitals usually are exposed in a conspicuous manner. These combined characteristics have led many investigators to suggest that the objects served as fertility symbols. According to Christopher Stringer and Clive Gamble, 'we cannot specify how Venus figurines were used, or why females were always carved, or even why some of them show consistent, exaggerated proportions'. The physiological features of these figurines, however, are remarkably consistent with numerous characteristics of cretinism." p. 5

"Morphologically, some of the Cro-Magnon Venus figurines represent the physical deformities of cretinism with near-photographic accuracy. Without doubt, Cro-Magnon artist knew the cretinous form base on then-contemporary victims. Both endemic and sporadic cretinism would have occurred in that age, just as they did in ancient historic times and in Europe at the beginning of the twentieth century." p. 8

"Any *Homo sapiens* was vulnerable to iodine deficiency, but what about *Homo neanderthalensis*? Surely Neanderthals suffered diseases of their own. Was their body chemistry similar enough to that of Cro-Magnons to require iodine and suffer from IDD? Neanderthal physiology is an enigma, as perplexing today as when the first fossil remains were discovered in 1856..Iodine appears to explain these 'superficial' differences. Indeed, Neanderthal skeletons resemble cretins far more closely than they resemble healthy modern humans. Conversely, cretin skeletons resemble Neanderthals more closely than they resemble healthy modern humans." p. 8-9

"Graphic comparisons presented by Finkbeiner are convincing evidence that certain bones, especially the femur and tibia, are practically identical among cretins and Neanderthals. Stringer and Gamble further refer to the 'high incidence of degenerative joint disease' among Neanderthal. Similarly, Erik Trinkaus found degenerative disease in the heads, arms, ribs, legs, and feet of the

Neanderthals in the Shanidar Cave collection; and Marcellin Boule found degenerative joint disease in the skull, jaw, spinal column, hip, and feet of the 'Old Man' of La Chapelle-aux-Saints, France, the most famous of all diseased Neandertal. In regard to cretinism, Daniel J. Ortner and W. G. J. Putschar stated that 'Most epiphyses show multifocal irregular ossification centers, which later fuse [and are]...often abnormal...misshapen flattened head[s] with a mushroom-like deformity[.]...[C]retin hips' leads to early and severe degenerative arthritis.'" p. 9-10

Section Heading—Geographic Isolation from Coastal Iodine Resources—"The incidence of cretinism can serve as an indicator of geographical isolation associated with glacial and sea-level fluctuations during the Pleistocene ice ages. The primary sources of iodine are saltwater fish, shellfish, and seaweed. Sea salt is an inadequate source unless it has been fortified with iodine derived by extraction, historically from seaweed and more recently from phosphate rock or geologic brines. Even today, soils are notoriously iodine deficient in continental interiors, and the world's 'goiter belts' are identified as mountainous and/or formerly glaciated regions." p. 15

Endo B. Analysis of Stresses around the orbit due to masseter and temporalis muscles respectively. *Journal of Anthropological Society Nippon*. 78:4:251-66. 1970.

Study showing the stresses that the supraorbital ridge (brow ridge) is exposed to during the biting action. This loading stress on this region of the skull causes supraorbital tori to form ([Frohlich 1992](#)).

Erickson GM. Brochu CA. How the "terror crocodile" grew so big. *Nature*. 398:205-206. 1999.

Deinosuchus is a giant crocodile from the late Cretaceous that inhabited North America. It weighed between 2,500 and 5,000 kg and was 8-10 meters long. How it got so big has remained a mystery. Bone studies of the fossil indicate that it grew slowly for many decades unlike the dinosaurs, which have a very rapid growth rate at the beginning, which then levels off as it matures. It is estimated that the giant crocodile took 35 years to attain its length.

Foster HD. Commentary: Neandertals and the thyroid gland: the selenium connection. *The Geographical Review*. 92:1:89-93. 2002.

This article indicates that the Neanderthal morphology was due to an iodine deficiency, which was aggravated in Neanderthals by the lack of selenium. Selenium is needed by the body to catalyze the iodine. Therefore the result would be the same—iodine deficiency (for an overview of the iodine connection see [Dobson 1998](#)).

"The negative impact of calcium and magnesium on the operation of the thyroid gland would seem particularly pertinent to any discussion of the evolution of Neandertals...I have been unable to find any significant Neandertal site from which skeletal remains have been recovered that is not located on or near limestone...it is possible that the Neandertals were a direct product of their environment; that is, that their cretinous appearance...may have been the consequence of a thyroid malfunction, resulting from extensive exposure to calcium- and magnesium-enriched drinking water. Certainly, Europeans who lived in limestone regions prior to iodine supplementation were generally goitrous and frequently cretinous...The obvious question that arises from such observations is, Could distinctive Neandertal skeletal traits be a consequence of thyroid malfunction caused by the calcium and magnesium excesses associated with limestone regions? That is, Were Neandertals endemic cretins?"

"The simplest interpretation...therefore, appears to be that Neandertals suffered from many of the characteristics of myxoedematous cretinism, caused not only by endemic iodine deficiencies but also by a genetically induced selenium inadequacy."

Frohlich B. Pedersen PO. Secular changes within arctic and sub-arctic populations: a study of 632 human mandibles from the Aleutian island, Alaska and Greenland. *Arctic Medical Research*. 51:173-88. 1992.

A study was done of Eskimo mandibles (lower jaw bones). They all exhibited mandibular tori. Mandibular tori are large bony lumps on the inside of the jawbone caused by the stress of heavy chewing. The sub-adult Eskimos did not have these tori. Therefore they were not genetic but cultural. Neanderthal skull all have supraorbital tori (large eyebrow ridges), these were caused by non-evolutionary factors such as chewing and facial muscular stress over extended periods of time.

Imai S. et al. Transcriptional silencing and longevity protein Sir2 is an NAD-dependent histone deacetylase. *Nature*. 403:795-800. 2002.

What cause this increased life span? During normal cell activity the cells produces rRNA. During cell process the rRNA malfunctions and produce extraneous intercellular pieces of DNA. These pieces of DNA link up in a circular fashion and are called extra-chromosomal DNA circles or EC for short. These ECs, which are housed in the nucleus then, reproduce, grow, and compete with the cell's normal DNA for enzymes and cellular energy. This competition destroys and kills otherwise normal cells. Hence ECs are toxic and they reduce the longevity of the cells. When an organism is under a restricted calorie diet an enzyme named Sir2 is produced. This enzyme affects the chromosomes in the cell nucleus and causes certain chromosome in the nucleus to be silenced or switched off. One of these chromosomes the enzyme affect is the ECs. Since the ECs are silenced they no longer compete with the nuclear DNA and the cell's longevity is extended.

Abstract—"Here we show that yeast and mouse Sir2 proteins are nicotinamide adenine dinucleotide (NAD)- dependent histone deacetylases, which deacetylate lysines 9 and 14 of H3 and specifically lysine 16 of H4. Our analysis of two SIR2 mutations supports the idea that this deacetylase activity accounts for silencing, recombination suppression and extension of life span in vivo. These findings provide a molecular framework of NAD-dependent histone deacetylation that connects metabolism, genomic silencing and ageing in yeast and, perhaps, in higher eukaryotes."

Israel H. The dichotomous pattern of craniofacial expansion during aging. *American Journal of Anthropology*. 47:47-52. 1977.

Showing how the crania reforms with aging. As the head ages it lengthens, widens, and flattens. These are all common features of Neanderthal crania. This indicates that Neanderthals were long lived.

Ivanhoe F. Was Virchow right about Neanderthal. *Nature*. 227:577-79. 1970.

Shows how rickets, a vitamin D deficiency, could have caused some of the unique Neanderthal morphology.

Lasker GW. The age factor in bodily measurements of adult male and female Mexicans. *Human Biology*. 25:1:50-63, 1953.

608 Mexican males and females were measured. The trend was toward increasing skull length with age.

Lemonick MD. Teens Before Their Time. *Time Magazine* 156:18, October 30. 2000.

Reports on the widespread occurrence of early puberty. "the average age of menarche, or first menstruation, had already fallen dramatically (from 17 to about 13) between the middle of the 19th century to the middle of the 20th century..." 15% of white girls the age of eight were showing signs of sexual maturity ([Ogilvy-Stuart 1994](#)).

Lin Y. *et al.* Extended life span and stress resistance in the *Drosophila* mutant *methuselah*. *Science*. 282:943-946. 1998.

Indicates that longevity may be genetically controlled. In this study a mutant gene in the fruit fly imparted longer lifespan. The life span increase was attributed to the genes effect on oxidative stress.

Abstract—"The mutant line methuselah (mth) displayed approximately 35 percent increase in average life-span and enhanced resistance to various forms of stress, including starvation, high temperature, and dietary paraquat, a free-radical generator...Thus the organism may use signal transduction pathways to modulate stress response and life-span."

Miller RA. *et al.* Longer life spans and delayed maturation in wild-derived mice. *Experimental Biology and medicine*. 227:7:500-508. 2002.

Wild mice were selected for longevity over domesticated stock. Not only could longevity be genetically selected but the longer-lived mice matured slower and had their first litter later. This is similar to the patriarchal record in Genesis. Men were living longer and the longer-lived men matured later.

Abstract—"Nearly all the experimental mice used in aging research are derived from lineages that have been selected for many generations for adaptation to laboratory breeding conditions and are subsequently inbred. To see if inbreeding and laboratory adaptation might have altered the frequencies of genes that influence life span, we have developed three lines of mice (Idaho [Id], Pohnpei [Po], and Majuro [Ma]) from wild-trapped progenitors, and have compared them with a genetically heterogeneous mouse stock (DC) representative of the laboratory adapted gene pool. Mean life span of the Id stock exceeded that of the DC stock by 24% ($P < 0.00002$), and maximal life span, estimated as mean longevity of the longest-lived 10% of the mice, was also increased by 16% ($P < 0.003$). Mice of the Ma stock also had a significantly longer maximal longevity than DC mice (9%, $P = 0.04$). The longest-lived Id mouse died at the age of 1450 days, which appears to exceed the previous longevity record for fully fed, non-mutant mice. The life table of the Po mice resembled that of the DC controls. Ma and Id mice differ from DC mice in several respects: both are shorter and lighter, and females of both stocks, particularly Id, are much slower to reach sexual maturity. As young adults, Id mice have lower natural alleles that retard the aging process. Genes present in the Id and Ma stocks may be valuable tools for the analysis of the physiology and biochemistry of aging in mice."

Ogilvy-Stuart AL. Clayton PE. Shalet SM. Cranial irradiation and early puberty. *Journal of Clinical Endocrinology and Metabolism*. 78:6:1282-85. 1994.

Shows how increases in radiation can lead to early puberty. The patriarchs reached puberty at a later age. Isaac was 40 when he married (Gen. 25:20). Chapter 5 and 11 of Genesis show a trend toward decreasing age at the birth of the first child (puberty). There was an increase of post-flood radiation. The source of this radiation was a reorganized atmosphere and more ground radiation caused by volcanic activity. This is one of the factors that led to a trend of early puberty and decreased life span.

Olshansky SJ. Carnes BA. Cassel C. In search of Methuselah: estimating the upper limits to human longevity. *Science*. 50:634-50. 1990.

"Most of the mortality declines and increase in life expectancy that occurred early in this century were a result of rapidly declining neonatal, infant, and maternal mortality." Life expectancy has increased not because of evolution but because of decreasing death rates in certain classes of people. People in times past lived just as long as we do, but statistically they had a lower life expectancy.

Rothman KJ. Moore LL. Singer MR. *et al.* Teratogenicity of high vitamin A intake. *New England Journal of Medicine*. 333:21:1369-73. 1995.

High vitamin A intake is a teratogen (causes birth defects). Early man ingested high levels of vitamin A. This would affect his skeletal structure before and after birth. ([Walker 1982](#)).

Susanne C. Individual age changes of the morphological characteristics. *Journal of Human Evolution*. 6:181-89. 1977.

A longitudinal study of the changes in body shape with aging. After a span of 22 years all the individuals in the study showed changes in cranial shape. The crania lengthened, flattened, and widened in all cases without exception.

Walker A. Zimmerman MR. Leakey REF. A possible case of hypervitaminosis A in *Homo erectus*. *Nature*. 296:248-50. 1982.

Overabundance of vitamin A could cause skeletal changes. This excess vitamin A is attributed to eating carnivore liver.

Wilson AC. Cann RL. The recent African Genesis of humans. 68-73. April 1992.

"...we know powerful jaw muscles may impose changes on the mandible, the browridge and other points on the skull: circumstances that promoted the evolution of these features in one population might do so again in a related population."

Wright DJM. Syphilis and Neanderthal man. *Nature*. 229:409. 1970.

Syphilis produces bone changes that are common in Neanderthal morphology.

Evolution

Genetics and Heredity. *Encyclopedia Britannica*. 1985

"New mutations are... mostly harmful or lethal. Beneficial mutations are so rare that they can be utilized economically only in species with very high reproductive rates. Thus, better strains of *Penicillium* have been raised from artificially produced mutations. Because this method has been done at the expense of discarding thousands of inferior mutants, this method is obviously not suited for farm animals. Nor can it be expected that an increase in mutation frequency, as a result of exposure to ionizing radiation from X-ray machines, artificial atomic disintegration, and radioactive isotopes can have any but harmful effects on the hereditary constitution of the human race." (p. 736-37)

Gould SJ. Is a new and general theory of evolution emerging? *Paleobiology*. 6:1:127. 1980.

"The absence of fossil evidence for intermediary stages between major transitions in organic design, indeed our inability, even in our imagination, to construct functional intermediates in many cases, has been a persistent and nagging problem for gradualistic accounts of evolution." Stephen Jay Gould is a professor of geology and paleontology at Harvard University.

Gould, SJ. *The Mismeasure of Man*. W. W. Norton & Co. New York, NY. 1993.

The theory of eugenics and how it was based on faulty scientific reasoning. A good study on how preconceived ideas can affect scientific research and writing. Eugenics was used by Hitler to support the extermination of the Jews.

Himmelfarb, Gertrude. *Darwin and the Darwinian Revolution*. Ivan R. Dee Pub. 1962.

The effect that Darwin had on society, the church, and science.

Moore KL. Persaud TVN. *Before We are Born: Essentials of Embryology and Birth Defects*. 5th ed. W.B. Saunders Co. Philadelphia. 1998.

"Seven to 8% of congenital anomalies are caused by gene defects. A mutation usually involves a loss or change in the function of a gene and is any permanent, heritable change in the sequence of genomic DNA. Because a random change is unlikely to lead to an improvement in development, *most mutations are deleterious and some are lethal*. The mutation rate can be increased by a number of environmental agents, such as large doses of radiation and some chemicals, especially carcinogenic (cancer-inducing) ones. Anomalies resulting from gene mutations are inherited according to mendelian laws; consequently, predictions can be made about the probability of their occurrence in the affected person's children and other relatives." p. 163

Raup D. Conflicts between Darwin and paleontology. *Field Museum of Natural History Bulletin*. Vol. 50. No. 1. pp. 22-29. January 1979.

"Well, we are now about 120 years after Darwin and the knowledge of the fossil record has been greatly expanded ([Darwin 1859](#)). We now have a quarter of a million fossil species but the situation hasn't changed much. The record of evolution is still surprisingly jerky and ironically, we have even fewer examples of evolutionary transition that we had in Darwin's time. By this I mean that some of the classic cases of darwinian change in the fossil record, such as the evolution of the horse in North America, have had to be discarded or modified as a result of more detailed information—what appeared to be a nice simple progression when relatively few date were available now appears to be much more complex and much less gradualistic. So Darwin's problem had not been alleviated in the last 120 years and we still have a record which does show change but one that can hardly be looked upon as the most reasonable consequence of natural selection."

West RR. Paleocology and uniformitarianism. *Compass* 45:216. 1968.

"Contrary to what most scientists write, the fossil record does not support the Darwinian theory of evolution because it is a theory (there are several) which we use to interpret the fossil

record. By doing so we are guilty of circular reasoning if we then say the fossil record supports this theory." Dr. West is assistant professor of paleobiology at Kansas state University.

Whitfield J. Born in a watery commune. *Nature*. 427:674-76. 2004.

According to evolution we all share a common ancestor. The characteristics of this common ancestor have remained elusive. Modern genetic sequencing and studies indicate that as one goes back further in the evolutionary line the genetic material is not diverse enough to give rise to all subsequent life forms. Although this is an evolutionary impossibility it is what would be expected if all things were created in their present basic biological configurations.

"If you go back far enough, humans, frogs, bacteria and slime moulds share a common ancestor. But scientists can't agree what it was like, or even whether it was a single creature. Probably all of the organic beings which have ever lived on this Earth have descended from some one primordial form,' Darwin wrote in his *Origin of Species*, published in 1859. Darwin had no way to peer that far back in time. But genome sequencing has given researchers hope that they can finally learn something about the ancestor of all life. In 1999, they even gave it a name, LUCA, for the last universal common ancestor. Yet despite the wealth of genomic data, LUCA has proven elusive. In theory, remnants of the organism from which all life evolved should be scattered around modern genomes. But so far, efforts to reconstruct LUCA's genes by building family trees from modern sequences have ended in frustration. Basic questions about LUCA's nature remain unanswered. Did it live in a hot-water environment, such as a hydrothermal vent at the bottom of the ocean, or in cooler conditions at the ocean surface? Was LUCA simple, like a bacterium, or more complex?"

"Oddly, this extensive comparison of genome sequences from widely divergent modern organisms has identified only about 60 genes that appear to be universal, and therefore probably date back to LUCA. That's nowhere near enough to sustain an organism, says Eugene Koonin, an evolutionary genomics researcher at the National Center for Biotechnology Information in Bethesda, Maryland."

Design

Burgess SA. Walker ML. Et al. Dynein structure and power stroke. *Nature*. 421:715-18. 2003.

Describe in great detail a small biological motor and how it operates. These small motors are about 12 nm in diameter. These small flagellum motors are extremely complex and much of there operation is still shrouded in mystery.

"Dynein ATPases are microtubule motors that are critical to diverse processes such as vesicle transport and the beating of sperm tails; however, their mechanism of force generation is unknown. Each dynein comprises a head, from which a stalk and a stem emerge. Here we use electron microscopy and image processing to reveal new structural details of dynein c, an isoform from *Chlamydomonas reinhardtii* flagella, at the start and end of its power stroke. Both stem and stalk are flexible, and the stem connects to the head by means of a linker approximately 10 nm long that we propose lies across the head. With both ADP and vanadate bound, the stem and stalk emerge from the head 10 nm apart. However, without nucleotide they emerge much closer together owing to a change in linker orientation, and the coiled-coil stalk becomes stiffer. The net result is a shortening of the molecule coupled to an approximately 15-nm displacement of the tip of the stalk. These changes indicate a mechanism for the dynein power stroke."

Coles P. The end of the old model Universe. *Nature*. 393:741-744. 1998.

Recent cosmological studies ([Luminett 2003](#), [Zehavai 1999](#)) suggest that the universe does not have enough mass to recontract after the supposed big bang. This means that the universe will eventually keep expanding forever and will never allow gravity to pull it back together for another oscillation in supposed chain of infinite contractions that have and will take place. In other words the universe had a definite beginning and will have a definite end. This means that some time in the past the universe came into existence out of nothing. This strongly indicates that the universe had a Creator or "First Cause."

"Exploding stars', 'ripples at the edge of space', 'antigravity', a 'Universe the size of a pea'. All of these have made somewhat garbled appearances in the press in the past few months. But there is more to these announcements than hype—they are the public manifestation of dramatic developments in cosmology that have fundamentally changed the character of the subject. Observations only recently made possible by improvements in astronomical instrumentation have put theoretical models of the Universe under intense pressure. The standard ideas of the 1980s about the shape and history of the Universe have now been abandoned—and cosmologists are now taking seriously the possibility that the Universe is pervaded by some sort of vacuum energy, whose origin is not at all understood."

"As even more data have been analysed and digested, most cosmologists have come to conclusion that something is badly wrong with the CDM Universe...Where does all this leave us? How is the Universe changing? As far as structure formation is concerned, we know that the 'standard' DM model is not the whole story. But the resurgence in classical cosmology has given us important clues as to precisely how this model might be modified to bring it into line with the Universe we see. The higher value of H_0 , the small value of Ω_0 inferred from dynamical arguments, and the weak deceleration seen in the supernova studies all suggest a global density of matter much less than the value required to make the Universe recollapse."

Dyson L. Kleban M. Susskind L. Disturbing implications of a cosmological constant. *Journal of High Energy Physics*. 10:011:1-26. October 2002.

The cosmological constant (Λ or Ω_Λ) is a factor that was placed in the equations of general relativity by Albert Einstein. This factor or term acts as a repulsive form of gravity. It counter balances the attractive nature of gravity and this helps keep the universe static. Measurement from the Hubble telescope and studies of supernovas indicates that the universe is expanding more rapidly than was previously believed and will not recollapse. This indicates the value of the cosmological constant is small but not zero. It is 40-120 orders of magnitude smaller than predicted by present cosmological models. This is known as the cosmological constant problem. Since the cosmological constant points to high degree of design in the universe some astrophysicists have considered eliminating it so that the problem of design will disappear. This is in spite of the fact that the cosmological constant is based on hard scientific evidence. If the cosmological constant is rejected this will prove that humans will reject evidence that points to a creator—evidence that reveals design in the universe.

"As emphasized by Penrose many years ago, cosmology can only make sense if the world started in a state of exceptionally low entropy. The low entropy starting point is the ultimate reason that the universe has an arrow of time, without which the second law would not make sense. However, there is no universally accepted explanation of how the universe got into such a special state. In this paper we would like to sharpen the question by making two assumptions which we feel are well motivated from observation and recent theory. Far from providing a solution to the problem, we will be led to a disturbing crisis."

"The question then is whether the origin of the universe can be a naturally occurring fluctuation, or must it be due to an external agent which starts the system out in a specific low entropy state?...This is very unnatural and presumably means that the universe starts in very special, extremely fine tuned state...We are forced to conclude that in a recurrent world like de

Sitter space our universe would be extraordinarily unlikely. What then are the alternatives?...Another possibility is an unknown agent intervened in the evolution, and for reasons of its own restarted the universe in the state of low entropy characterizing inflation....Perhaps the only reasonable conclusion is that we do not live in a world with a true cosmological constant."

Johansson LC. Norberg RA. Delta-wing function of webbed feet gives hydrodynamic lift for swimming propulsion in birds. *Nature*. 424:65-68. 2003.

This study reveals how the delta (Δ) shaped webfeet of many aquatic birds is uniquely suited for propulsion as the bird is floating on the water's surface and swimming.

Abstract—"Because of their delta shape, webbed feet can generate propulsive forces continuously through two successive modes, from drag at the beginning of the stroke, all the way through the transition to predominantly lift later in the stroke."

Krauss LM. Starkman GD. Life, the universe, and nothing: life and death in an ever-expanding universe. *The Astrophysical Journal*. 5311:22-30. 2000.

Cosmology has revealed that the universe is an "open universe." In other words there is not enough mass and therefore not enough gravity to recollapse the universe. The universe will not recollapse and cycle into another big bang. The universe had a beginning and it will have an end, it will continue to expand into nothingness. Sometime in the past the universe came into existence out of nothing—it therefore had a Creator. This paper deals with the limitations that the expanding universe has placed on humans and their continued existence such as: there is no eternal life, the universe is decaying according to the second law of thermodynamics, any human civilization is finite, natural knowledge is finite, and various other physical constraints.

Abstract—"Current evidence suggests that the cosmological constant is not zero, or that we live in an open universe. We examine the implications for the future under these assumptions, and find that they are striking. If the universe is cosmological constant-dominated, our ability to probe the evolution of large-scale structure will decrease with time; presently observable distant sources will disappear on a timescale comparable to the period of stellar burning. Moreover, while the universe might expand forever, the integrated conscious lifetime of any civilization will be finite, although it can be astronomically long. We argue that this latter result is far more general. In the absence of possible exotic and uncertain strong gravitational effects, the total information recoverable by any civilization over the entire history of our universe is finite. Assuming that consciousness has a physical computational basis, and therefore is ultimately governed by quantum mechanics, life cannot be eternal."

"The picture we have painted here is not optimistic. If, as the current evidence suggests, we live in a cosmological constant-dominated universe, the boundaries of empirical knowledge will continue to decrease with time. The universe will become noticeably less observable on a timescale which is fathomable. Moreover, in such a universe, the days—either literal or metaphorical—are numbered for every civilization. More generally, perhaps surprisingly, we find that eternal sentient material life is implausible in any universe."

Luminet JP. *et al.* Dodecahedral space topology as an explanation for weak wide-angle temperature correlation in the cosmic microwave background. *Nature*. 425:593-95. 2003.

Ellis GFR. The shape of the universe. *Nature*. 425:566-67. 2003.

In both of these articles data is presented that shows that the universe is unbounded but finite. Much like a small two dimensional bug on the surface a large three dimensional globe. Indications are that the universe is not infinite in size ([Coles 1998](#), [Zehavai 1999](#)).

Luminet 2003 Abstract—"The current 'standard model' of cosmology posits an infinite flat universe forever expanding under the pressure of dark energy. First-year data from the Wilkinson Microwave Anisotropy Probe (WMAP) confirm this model to spectacular precision on all but the largest scales. Temperature correlations across the microwave sky match expectations on angular scales narrower than 60° but, contrary to predictions, vanish on scales wider than 60° . Several explanations have been proposed. One natural approach questions the underlying geometry of space—namely, its curvature and topology. In an infinite flat space, waves from the Big Bang would fill the universe on all length scales. The observed lack of temperature correlations on scales beyond 60° means that the broadest waves are missing, perhaps because space itself is not big enough to support them. [Here we present a simple geometrical model of a finite space](#)—the Poincare dodecahedral space—which accounts for WMAP's observations with no fine-tuning required. The predicted density is $\Omega_0 \approx 1.013 > 1$, and the model also predicts temperature correlations in matching circles on the sky."

Ellis 2003—"An analysis of astronomical data suggests not only that the Universe is finite, but also that it has a specific, rather rigid topology. If confirmed, this is a major discovery about the nature of the Universe."

Mackenzie D. Proving the perfection of the honeycomb. *Science*. 285:1338-39. 1999.

Shows the perfection of the honeycomb design from a mathematical and engineering perspective.

"Why do bees build their honeycombs out of hexagonal cells?...Until this summer no one could prove that a honeycomb was the sweetest solution. Now, a mathematician has removed all doubt: bees do it best. The result also confirms the intuition of human engineers, who have relied on honeycomb composite material made of paper, graphite, or aluminum to reduce the weight of components for cars, planes, and spacecraft with little sacrifice in strength."

Marshall CB. Fletcher GL. Davies PL. Hyperactive antifreeze protein in a fish. *Nature*. 229:153. 2004.

Evolutionary scientists state that the presence of junk DNA often called pseudogenes provides proof of evolution. This paper reveals that a former pseudogene actually is a useful protein gene. This gene is used by fish to help them survive in icy waters. This indicates that pseudogenes are actually part of an intelligent design feature. Many pseudogenes are simply genes whose operating mechanism or purpose is unknown.

"Here we describe a previously undiscovered antifreeze protein from this flounder that is extremely active (as effective as those found in insects) and which explains the resistance of this fish to freezing in polar and subpolar waters...At the time of its discovery, the *5a* gene was dismissed as an [antifreeze-protein pseudogene](#), largely because the protein it encodes would have been grossly different from type I AFP and had never been detected in the flounder."

Rodnina MV. Savelbergh A. Katunin VI. Hydrolysis of GTP by elongation factor G drive tRNA movement on the ribosome. *Nature*. 385:37-41. 1997.

Cross RA. A protein-making motor protein. *Nature*. 385:18-19. 1997.

Both of these articles describe the inner workings of the ribosomes and likens them to molecular motors more efficient and faster than laboratory motors that synthesize proteins.

Rodnina 1997 Abstract—"By coupling the free energy of GTP hydrolysis to translocation, EF-G serves as a motor protein to drive the directional movement of transfer and messenger RNAs on the ribosome."

"The function of EF-G is to translate chemical energy, derived from GTP hydrolysis into directional molecular movement on the ribosome. That is to function as a motor protein. There are similarities in structure between a kinesin-related motor domain and several GTPases, as well as in the switch mechanism induced by nucleoside triphosphate hydrolysis. The list of proteins related to the classic motor proteins is growing: all promote directional molecular movement..."

Cross 1997—"Ribosomes are programmable molecular devices that synthesize proteins. They work like laboratory peptide synthesizers by robotic repetition of a synthetic cycle. But the molecular-scale ribosomal machinery is considerably—about 10^5 fold—faster, and more accurate, than the laboratory model. The ribosome binds its punched-tape set of instructions, the linear messenger RNA code, and sequentially reads each instruction. It then selects the appropriate messenger from the 20 possibilities in the surrounding solution, plugs it on, and translocates one notch along the instruction tape. Iteration of this cycle progressively extrudes the growing protein chain....it is an authentic molecular motor. "

Rubner M. Synthetic sea shell. *Nature*. 426:925-26. 2003.

"The mechanical properties of natural substances such as bone and shell are envied by those involved in the fabrication of materials. A 'bricks-and-mortar' structure, assembled layer by layer, is the key to making sea shells...For a materials scientist, cross-sectional images of the complex microstructures of naturally occurring hard materials such as bones and sea shells are awe-inspiring. Over...years, nature has devised schemes to combine seemingly incompatible building blocks — 'soft' organic proteins and 'hard' inorganic particles of calcium carbonate — in a manner that produces composite materials with the unusual combination of high strength, hardness and toughness. Imagine, however, that you could build such a structure as a mason would, one layer at a time, from the bottom up. So far, attempts to mimic these structures with synthetic building-blocks have failed to produce a material with similarly impressive mechanical properties, because most conventional processing techniques simply do not offer the nanoscale level of control needed to create a highly regular bricks-and-mortar-type arrangement. Nature has no such difficulty with nanoengineering: it can assemble, in a regular manner, building blocks of the right dimensions that interact strongly enough at their interfaces to allow the transfer of deformation energy between the rigid bricks and the softer mortar. Reproducing these elements synthetically is a challenge."

Samatey FA. *et al.* Structure of the bacterial flagellar hook and implication for the molecular universal joint mechanism. *Nature*. 431:1062-68. 2004.

Most bacteria propel themselves through the use of flagella. These are long propeller or oar like structures that rotate and paddle. Rotational speed can be more than 300-400 times per second and can continue for the life of the bacteria in some cases for years. The following article indicates the complexity of the bacterial flagellar. The flagella not only can rotate but also must be able to bend and flex in order to allow the bacteria to propel themselves directionally. This article reveals the complexity of design and unique engineering that is inherent in the flagella and its motor.

Abstract—"The bacterial flagellum is a motile organelle, and the flagellar hook is a short, highly curved tubular structure that connects the flagellar motor to the long filament acting as a helical propeller. The hook is made of about 120 copies of a single protein, FlgE, and its function as a nano-sized universal joint is essential for dynamic and efficient bacterial motility and taxis. It

transmits the motor torque to the helical propeller over a wide range of its orientation for swimming and tumbling. Here we report a partial atomic model of the hook obtained by X-ray crystallography of FlgE31, a major proteolytic fragment of FlgE lacking unfolded terminal regions, and by electron cryomicroscopy and three-dimensional helical image reconstruction of the hook. The model reveals the intricate molecular interactions and a plausible switching mechanism for the hook to be flexible in bending but rigid against twisting for its universal joint function."

Singleton MR. et al. Crystal structure of RecBCD enzyme reveals a machine for processing DNA breaks. *Nature*. 432:187-193. 2004.

DNA molecules are often broken by ionizing radiation. This article reveals the complexity of the molecular machine that repairs these breaks. This article reveals that a microscopic enzyme uses a three-step method to accomplish this. This enzyme takes broken DNA strands, unzips them and then adds a new sequence to the broken end.

"RecBCD has both 30–50 and 50–30 helicase activities, contributed by the RecB and RecD subunits, respectively. These subunits drive DNA unwinding by acting as ssDNA motors, pulling the two antiparallel strands of the DNA across the pin of the RecC subunit and thus splitting the duplex."

Steinberg J. A mist opportunity. *National Geographic*. December 2002.

"Namibia's *Stenocara* beetle, whose bumpy back gathers moisture from fog, is teaching architects in arid lands to build better roofs. Oxford biologist Andrew Parker has discovered that the slightly flattened peaks on the bug's back attract water. Droplets then run into waxy, water-repellent valleys and are channeled into the mouth. With physicist Chris Lawrence, Parker has duplicated and enlarged this design for tents and rooftops, increasing fog-harvesting efficiency. "Animals are master engineers, so we copy them," say Parker, who has also modeled a nonreflective plastic after the eye of a 45-million-year-old fossil fly."

Vallee RB. Hook P. A magnificent machine. *Nature*. 421:701-2. 2003.

"Electron-microscope studies of the motor protein dynein reveal fascinating details of the movements of its various structural regions. The protein displays a degree of gymnastic ability that is rarely seen."

"Only a handful of proteins have the remarkable ability to use the chemical energy stored in ATP molecules to produce force and carry out work. Dynein is the largest of these so-called motor proteins, and, because of its complexity, the mechanism by which it produces force has been a mystery. But on page 715 of this issue, Burgess and colleagues provide the most detailed picture to date of how this motor works. Their computer-averaged electron microscopic images show the protein in two stages of its force-production cycle, and the proposed mechanism of action is unique."

Zehavi I. Dekel A. Evidence for a positive cosmological constant from flows of galaxies and distant supernovae. *Nature*. 401:252-4. 1999.

The cosmological constant is a mathematical factor that ties together the different parameters of the physical universe. The smaller the cosmological constant the more unity or agreement is extant in the universe. The universe has a very small cosmological factor. The measured value is 46 orders of magnitude smaller than theoretical value. Which implies that the universe is very tightly connected or ordered. This implies a unifying feature such as a common Creator and not merely chance ([Coles 1998](#), [Luminet 2003](#)).

Abstract—"Recent observations of high-redshift supernovae seem to suggest that the global geometry of the Universe may be affected by a 'cosmological constant', which acts to accelerate the expansion rate with time...This type of universe, however, seems to require a degree of fine tuning of the initial conditions that is in apparent conflict with 'common wisdom.'"

This small value of the cosmological constant also reveals that the universe is expanding but not contracting in opposition to an oscillating universe required by the "Big Bang" theory.

"The favoured model is therefore an unbound universe that will accelerate forever, although it is still impossible yet to determine whether the global geometry is flat, open or closed."

"Such comparable contributions from the mass density and the cosmological constant represent a puzzling fine tuning, for example because the two parameters Ω_m and Ω_Λ , are expected to vary with time in opposite senses. The standard theory expects the cosmological constant either to vanish or be larger by many orders of magnitude. Perhaps entropic arguments may be needed to explain such a fine tuning. Although the observed constraints are not yet finally confirmed, they already seem interesting enough to pose a serious challenge to theoretical physics."

The Genesis Flood

Allen DC. *The Legend of Noah*. University of Illinois Press. Urbana. 1963.

"This book is devoted to tracing the effects of the literal and historical interpretation of the story of Noah on the literary and artistic treatments of the legend in the sixteenth and seventeenth centuries. (Back cover)" Also have sections that deal with the different historical/scientific interpretations of the Genesis account.

Baker VR The channeled scabland: a retrospective. *Annual Review of Earth and Planetary Sciences*. 37:393-411. 2009.

This is a very important paper for two reasons: (1) it shows the catastrophic results of large mega floods that can be used to support the sculpting of the earth by the Genesis flood, including post flood sculpting. (2) It shows the bias of the uniformitarian position supported by many geologists and how even with overwhelming geologic and field evidence that the uniformitarianism position is thoroughly entrenched in the geologic and academian world and only given up with much reluctance (See [Gupta 2007](#) and [Malde 1968](#)).

Abstract—"The Channeled Scabland of east-central Washington in the United States is a complex of anastomosing rock-cut fluvial channels, cataracts, loess islands, rock basins, broad gravel deposits, and immense gravel bars. In the 1920s, J Harlen Bretz demonstrated that the Channeled Scabland formed by cataclysmic erosion and deposition from Pleistocene megaflooding derived from the margins of the Cordilleran Ice Sheet, particularly glacial Lake Missoula in western Montana and northern Idaho."

"By explaining this assemblage as the result of erosion and deposition by cataclysmic flooding, J Harlen Bretz initiated one of the great scholarly debates in the history of the Earth sciences. Bretz was led to his "outrageous hypothesis" by detailed study of the field relationships, most notably multiple levels of divide crossings, cataracts, gravel bars, and rock basins. He concluded that so much floodwater crossed the plateau that it completely filled the preexisting valleys, thereby allowing water to spill across the intervening divides. In this way, the preflood valleys were transformed to a complex of dividing and rejoining channel ways, which Bretz named the Channeled Scabland."

"Named the Spokane Flood, Bretz's proposed cataclysm neatly accounted for numerous interrelated aspects of the Channeled Scabland landscape and nearby regions. Nevertheless, the geological community largely resisted his bold hypothesis for decades, despite an enthusiastic, eloquent defense thereof. Resolution of the controversy came gradually, initially with the recognition by Pardee of a plausible source for the huge amounts of floodwater. Pardee showed that ice-dammed Pleistocene glacial Lake Missoula, holding ~2600 cubic kilometers of water, formed in northern Idaho and western Montana and subsequently drained very rapidly to the Channeled Scabland. Eventually, the accumulating field evidence became overwhelming, particularly when Bretz et al. synthesized new data obtained by the Bureau of Reclamation during the development of the Columbia Basin Irrigation Project in the 1950s. Especially important for convincing the skeptics was the discovery that giant current ripples (GCRs; i.e., fluvial dunes) cap many of the scabland gravel mounds that Bretz had correctly interpreted in the 1920s to be river bars. By the 1960s and 1970s, as evidence mounted and as advances occurred in the understanding of the physical processes of cataclysmic flooding, Bretz's bold hypothesis came to be generally accepted."

Bailey, Lloyd R. *Noah the Person and the Story in History and Tradition*. University of Southern Carolina Press. 1989.

The Flood interpreted as a local event. This book has a very good section on the various sightings of the Ark on Mt. Ararat and how many of these sightings are built on very dubious information.

Baxter J. Tuzun U. *et al.* Stratification in poured granular heaps. *Nature* 391:136. 1998.

Stratification can be caused by sediment settling and grain size. In this experiment depending on sediment size and pouring time stratification identical to very fine laminar flows was duplicated in a few minutes. A few inches of some geological laminar flows have been interpreted as giving ages in thousands of years. Identical laminar striations were duplicated in a few minutes.

Cheng L. Birch MC. Insect flotsam: an unstudied marine resource. *Ecological Entomology*. 3:87-97. 1978.

Shows how insects are found far out at sea. These insects are carried hundreds of miles offshore by winds and can survive for long periods of time. This has implications for repopulating areas devastated by floods and other natural disasters.

Dickinson WR. Gehrels GE. U-Pb ages of detrital zircons from Permian and Jurassic eolian sandstones of the Colorado Plateau, USA: paleogeographic implications. *Sedimentary Geology*. 163:29-66. 2003.

This paper postulates that much of the sedimentary sandstone that was deposited over wide areas of Colorado actually came from eroded areas of the Appalachian Mountains. This eroded material was transported by large presently unknown continental river systems that were thousands of kilometers long.

Abstract—We infer that transcontinental Permian and Jurassic river systems transported detritus of Appalachian provenance westward across the subdued surface of the Laurentian craton, for deposition as proximate sources for eolian systems feeding the ergs, on unconsolidated fluvial plains, deltas, and strandlines that lay up-paleowind along or near the Cordilleran paleoshoreline north and northeast of the Colorado Plateau. The postulated river systems headed in the remnant Appalachian orogen (Permian) or the incipient Atlantic rift belt (Jurassic), and additional transport

of the Appalachian-derived detritus toward the Colorado Plateau was achieved by longshore drift of sediment southward along the Cordilleran paleoshoreline under the influence of prevailing trade winds in the Permian–Jurassic tropics.

"Analysis of the age spectra of detrital zircons from eolianite sandstones in Permian and Jurassic erg deposits of the Colorado Plateau indicates ultimate derivation of nearly half the eolian sand from the Appalachian orogenic belt along the far eastern margin of Laurentia. The remainder of the erg sand was derived in subequal proportions from Precambrian bedrock of the nearby Ancestral Rocky Mountains (ARM) province and of the more distant Laurentian shield. The sands were probably delivered to positions directly upwind from the erg accumulations by transcontinental river systems heading in residual highlands of the Appalachian orogen or in rift uplands of the successor Atlantic taphrogen. The paleorivers crossed the Laurentian craton along courses 2000 km long, and fluvial sediment dispersal was supplemented by longshore sediment drift along Cordilleran paleoshorelines for 1000+ km under the influence of tropical trade winds."

Discover Magazine. In Search of the Elusive Megaplume. p.108-15. March 1999.

Shows how large bodies of water can travel for hundreds of miles and remain relatively unmixed with surrounding water. Answers the question about fresh and salt water mixing during the flood.

Espinoza ED. Mann MJ. The history and significance of the Schreger pattern in proboscidean ivory characterization. Journal of the American Institute for Conservation. 32:3: 241-48. Article 3. 1993.

During the flood catastrophes many animals were buried in silt and sediment. The Alaskan and Siberian woolly mammoths are one example (see [Stewart 1977](#) and [Vereshchagin 1974](#)).

"Mammoth ivory is excluded from import restrictions. Although many extinct elephant-like mammals, such as the Gomphotherium, the Stegodon, and the mastodon left tusk material in the fossil record, only Alaskan and Siberian woolly mammoths (*Mammuthus primigenius*) produced ivory that has been sufficiently well preserved to be of value for trade."

"Mammoth ivory has been a significant commercial entity for centuries. Between 1809 and 1910 the Siberian ivory mining industry extracted nearly 6,000 metric tons of mammoth tusks; over the last 350 years, approximately 7,000 tons of mammoth ivory have been imported into China, and it has been estimated that 550,000 tons of mammoth tusks have yet to be recovered from a 1,000 km coastal strip between the Yana and Kolyma rivers in Siberia."

Flynn JJ. et al. South America's missing mammals. Scientific American 296:5:68-75. May 2007.

Flynn JJ. *et al.* The Tinguiririca fauna, Chile: biochronology, paleoecology, biogeography, and a new earliest Oligocene South American land mammal "age." Palaeogeography, Palaeoclimatology, Palaeoecology. 195:3/4:229-59.

Mammal fossils discovered in the Chilean Andes reveal an unexpected assemblage of unique mammals that once inhabited South America. These fossils find overturned long accepted theories about the geologic history of this area. One question is how did these mammals arrive from Africa? It is commonly assumed that they were transported overwater on floating rafts of vegetation.

"Seafaring Rodents-These comparisons strongly suggest that the Tinguiririca rodent is more closely related to animals in Africa. The absence of plausible caviomorph forebears in older North American fossil beds also supports the out-of-Africa theory.

"Presumably the original caviomorph colonists traveled from Africa to South America on floating logs or other rafts of vegetation--scientists' best guess for how various unusual plants and animals made their way to many geographically isolated regions [see "Madagascar's Mesozoic Secrets," by John J. Flynn and André R. Wyss; *Scientific American*, February 2002]. The idea of such an incredible transoceanic journey may seem far-fetched, but it is more plausible in the context of the global environment before about 32 million years ago. At that time, the South Atlantic was only about 1,400 kilometers at its narrowest point--half as wide as it is today--and east-to-west ocean currents in the tropics were strengthening sporadically. These conditions would have permitted a journey in about two weeks, and the animals may have gone into torpor (inactivity and greatly reduced metabolism during times of stress). Moreover, sea level was dropping at the time (because of the formation of ice sheets on and around Antarctica), so one or more volcanic "stepping stone" islands, now submerged, may have made the crossing easier." (*Scientific American*, p. 72-73)

"Prior to discovery of Tinguiririca rodents, the first appearance of both groups had been in the Desecadan, suggesting that they might have arrived simultaneously. Although their oldest occurrences now are temporally displaced, the rarity of primates in the fossil record does not preclude the possibility of a concurrent arrival, possibly related to unusual physical circumstances promoting overwater dispersal (e.g. climate, sea level, or oceanic circulation changes). As neither group is yet reported from well-sampled SALMAs just preceding the Eocene-Oligocene transition interval (Casamayoran and Mustersan at ~ 38-36 Ma; Kay et al 1999), and rodents are present by the Tinguirirican (at or before 31-32 Ma), it is possible that paleoenvironmental changes at that time facilitated this rare long-distance dispersal event from Africa."

Gupta S. Collier JS. *et al.* Catastrophic flooding origin of shelf valley systems in the English Channel. *Nature*. 448:342-46. 2007.

This paper shows evidence that the shelf valley bedrock system in the English Channel was carved out catastrophically by a mega-flood. The paper likens this flooding to the catastrophic flooding that carved out the Channel Scablands in Washington. A massive flood of water from the North Sea breached and eroded away a rock dam at the present day Dover Straits. This led to the drainage patterns in solid bedrock and the filling of the English Channel with water. The paper states that this has implication for migration of people from Europe to Britain. This supports the Peleg scenario in which rising seawater separated large bodies of land as stated in Gen. 10:25 (See [Baker 2009](#) and [Malde 1968](#)).

Abstract—"Megaflood events involving sudden discharges of exceptionally large volumes of water are rare, but can significantly affect landscape evolution, continental-scale drainage patterns and climate change. It has been proposed that a significant flood event eroded a network of large ancient valleys on the floor of the English Channel—the narrow seaway between England and France. This hypothesis has remained untested through lack of direct evidence, and alternative non-catastrophist ideas have been entertained for valley formation. Here we analyse a new regional bathymetric map of part of the English Channel derived from high-resolution sonar data, which shows the morphology of the valley in unprecedented detail. We observe a large bedrock-floored valley that contains a distinct assemblage of landforms, including streamlined islands and longitudinal erosional grooves, which are indicative of large-scale subaerial erosion by high-magnitude water discharges. Our observations support the megaflood model, in which breaching of a rock dam at the Dover Strait instigated catastrophic drainage of a large pro-glacial lake in the southern North Sea basin. We suggest that megaflooding provides an explanation for the permanent isolation of Britain from mainland Europe during interglacial high-sea-level stands, and

consequently for patterns of early human colonisation of Britain together with the large-scale reorganization of palaeodrainage in northwest Europe."

"The upper surface of the islands is generally smooth and flat, although locally oblique channels cut through small divides at their crest. The streamlined islands bear a striking resemblance to loess islands preserved in the Cheney– Palouse terrain of the Channeled Scabland of Washington, USA (Fig. 3d). These formed when outburst flooding from the Pleistocene glacial lake Missoula eroded through loess cover into basalts. The distinctive shape of the islands is thought to be a feature to minimize resistance in fluid flow."

"Our topographic data permit estimation of the water discharges associated with the flooding (see Methods). Maximum peak discharges for the flood events range between, $\sim 0.2 \times 10^6 \text{ m}^3 \text{ s}^{-1}$ and $\sim 1 \times 10^6 \text{ m}^3 \text{ s}^{-1}$, making them some of the largest megafloods on Earth."

Malde HE. The catastrophic Late Pleistocene Bonneville flood in the Snake River plain, Idaho. Professional Paper 596. Washington, D.C. U.S. Geological Survey. 1968.

Details the study of the megaflood that overflowed the Snake plain river (See [Baker 2009](#) and [Gupta 2007](#)).

Abstract—"A catastrophic flood caused by overflow and rapid lowering of Pleistocene Lake Bonneville at Red Rock Pass near Preston, Idaho, descended Marsh Creek Valley and reached the Snake River Plain at the site of Pocatello. Large tracts in the upper Snake River Plain were inundated, particularly an area near American Falls and a basin that surrounds Rupert. Farther downstream, the Snake River canyon that extends 200 miles West of Twin Falls was flooded to a depth of 300 feet. Spectacular erosion in the form of abandoned channels, spillways, cataracts, and scabland identifies the flood path between American Falls and Twin Falls, and the canyon farther west is strewn with huge boulders some of them more than 10 feet in diameter, which are heaped in enormous bars of boulders and sand that rise nearly 300 feet above the canyon floor."

"From the formula of Eardley Gvosdetsky, and Marsell (1957, p. 1143) - (area at level 5,135 X 100 ft) + (difference in area at levels 5,235 and 5,135 x 100 ft, divided by 2 1/2) - the volume of water between the Bonneville shoreline and a spillway 100 feet higher would have been 1.3 billion acre-feet, or about 380 cubic miles. Thus, a continuous discharge of 15 million cfs - that is, a little more than one-third cubic mile per hour - could have been maintained 6 weeks. A discharge of 1.8 million cfs would have lasted about a year."

Merril, Eugene H. *An Historical Survey of the Old Testament*. Baker Books. Grand Rapids, MI. 1994.

A short article on the Genesis flood appears on p.65. Discusses the woolly mammoth, the water canopy, and the previous tropical climate of the earth.

Motohiko M. Hirose K. Yurimoto H. *et al.* Water in Earth's lower mantle. *Science*. 295:1885-87. 2003.

The Earth's lower mantle may contain a great deal of water. According to this study the earth's interior may contain more than five times the amount of water present in the oceans. Minerals in the earth have the ability to chemically react with hydrogen and recombine with oxygen, thus forming water (H₂O).

Abstract—"Earth's lower mantle may store about five times more H₂O than the oceans."

"Our results suggest that the lower mantle can potentially store considerable amount of water. A lower mantle, consisting of 79 wt% Mg-perovskite, 16 wt% magnesio-wustite, and 5 wt% Ca-perovskite, can contain 0.2 wt% H₂O. When this capacity is integrated over the mass of the lower mantle, the total mass of water is ~5 times that of the oceans."

Oard, Michael J. *An Ice Age Caused by the Genesis Flood*. Institute for Creation Research. El Cajon, CA. 1990.

Supports the idea that the ice ages were caused by the Genesis flood.

Odell NE. The highest fossils in the world. *Geology Magazine*. 104:173-74. 1967.

Details a common type of marine fossil that was retrieved from Mount Everest by a team of Swiss climbers in 1956 and an American team in 1963. The limestone rocks contained crinoidal fragments. A crinoid is a marine organism having a cup shaped flower and five or more feathery arms. They are classed with starfishes, sea urchins, and other similar forms. They are sometimes called sea lilies. They are deep-water marine creatures usually living at depth greater than 200 meters.

"All the various summit specimens, Professor Gansser states, are lithologically quite identical. They consist of fine-grained, thin-bedded grey calc-schists or platy limestones...Gansser continues: 'Of special interest is the fact that both samples contain crinoidal fragments...In one elongated stem-fragment the segmentation is visible, while one small plate still shows the well-preserved perforation.' Moreover, he observes: 'These remains representing the highest fossils in the world, are unfortunately not sufficiently well-preserved to allow an age-determination of the top Everest limestone.'"

Patten, Donald. *The Biblical Flood and the Ice Epoch*. Pacific Meridian Publishing, Co. Seattle WA. 1966.

A study of astral catastrophism as a mechanism for the flood. Interesting theory on the origin of the ice age and puts forth a unique theory on mountain building.

Smith RL. *Ecology and Field Biology* 5th ed. Harper Collins. New York, NY. 1996.

Stratification in the ocean is caused by differences in salinity, temperature, pressure, density etc. If a large layer of fresh and salt water were brought into contact they would form layers and not mix. This answers the common question of how fresh and salt water fish would survive the flood.

Stewart J M. Frozen mammoths from Siberia bring the Ice Ages to vivid life. *Smithsonian*. 8:60-69. 1977.

"They found an extraordinary sight: thousands of gray bones lying on, or protruding from, the riverbank's alluvial deposit for more than 200 yards and so densely packed that they were protecting the bank from erosion. No such mammoth boneyard had ever been found before."

"At the Berelyakh site the present river, having changed its course over the millennia, has cut its way through the hills releasing the bones found littering the bank. Other bones are still buried in the bed of the previous river course, now about 25 feet above the present river...Through such causes almost 50,000 mammoth tusks are said to have been found in Siberia between 1660 and 1915, serving an extensive mammoth ivory trade. But this is nothing compared to those still

buried, according to Vereshchagin, who calculates that the heavy erosion of the Arctic coast spills thousands of tusks and ten of thousands of buried bones each year into the sea and that along the 600-mile coastal shallows between the Yana and Kolyma lie more than half a million tons of mammoth tusks with another 150,000 tons in the bottom of the lakes of the coastal plain." (see [Espinoza 1993](#) and [Vereshchagin 1974](#))

Vereshchagin NK. The mammoth "cemeteries" of North-East Siberia. *Polar Record*. 17:106:3-12. 1974.

"The north of Yakutia has long been known to be an immense storehouse of frozen disjointed bones of many hundreds of thousands of large Pleistocene mammals—mammoth, horses, woolly rhinoceroses, bison, musk-oxen—"horned cattle", as the first Russian travelers called them. Such knowledge had a commercial value....for the quarrying of mammoth ivory has gone on for many centuries. In quality these tusks, which have lain in frozen ground for tens of millennia, are as good as those of modern African and Indian elephants and are sometime two or three times larger." (see [Espinoza 1993](#) and [Stewart 1977](#)).

Weinstein SA. Catastrophic overturn of the earth's mantle driven by multiple phase changes and internal heat generation. *Geophysical Research Letters*. 20:2:101-104. January 1993.

One of the flood models is based on rapid or catastrophic plate tectonics. One result of this rapid movement would be basalt flood plains. One of the largest of the basalt flood plains covers the Pacific Northwest. It is called the Columbia Basin Plateau. Lava poured out to more than 6,000 feet in thickness and covered more than 63,000 square miles. As the magma surfaced the earth's crust sank and the sinking earth and the lava plain produced a depressed lava plain or lake—the Columbia Basin. Fossils of leaf impressions, petrified wood, vertebrate's fossils, and insects are found in these ancient basaltic lava lakebeds. During the flood period these processes would have been accelerated.

Abstract—"The effects of phase changes and strong internal heat generation may combine to bring about brief, but extremely intense episodes of rapid thermal convection in the Earth's mantle...Such episodes may be analogs to super plume activity which has been hypothesized to give rise to an intense episode of intra-plate volcanism and stabilize the geodynamo against reversal."

"The basic premise is that a plume head detaching from a thermal boundary layer at the core-mantle boundary (CMB) will greatly increase the heat flow at the CMB and stabilize the geodynamo against reversal. After 10-20 Myr the plume head will reach the surface giving rise to flood basalts."

Weis PL. Newman WL. *The Channeled Scablands of Eastern Washington The Geologic Story of the Spokane Flood* 2nd edition. Eastern Washington University Press. 1999. Also available on line from the United States Geological Survey (USGS): http://www.nps.gov/history/history/online_books/geology/publications/inf/72-2/index.htm

This book gives the background for the formation of the Channeled Scablands, which were caused by a massive flood in the Spokane area of Washington. The Channeled Scablands are simply the drainage basin left by the emptying of Lake Missoula.

"The name "Channeled Scablands" was first used in the early 1920's by geologist J Harlan Bretz of the University of Chicago, who made a comprehensive study of the region and proposed the idea that the erosional features were the result of a gigantic flood. Although Bretz' concept

sparked a lively controversy, most geologists today agree that the Scablands were carved by a flood of unprecedented proportions that took place 18,000 to 20,000 years ago during the Great Ice Age."

"The Spokane Flood left its mark along a course of more than 550 miles, extending from western Montana to the Pacific Ocean, but the most spectacular flood features were carved into the black volcanic rock terrain in eastern Washington. This rock, the "floor" of the Scablands, is basalt—a dense crystalline lava that covers more than 100,000 square miles in parts of Washington, Oregon, and Idaho. The part of the lava field that underlies the Scablands in eastern Washington is a saucer-shaped area of about 15,000 square miles almost completely surrounded by mountains and nearly encircled by three rivers—the Columbia, the Spokane, and the Snake."

"The water that was impounded behind the dam filled the tributary valleys for many miles to the east. At its highest level Glacial Lake Missoula covered an area of about 3,000 square miles and contained an estimated 500 cubic miles of water—half the volume of present day Lake Michigan. Its surface stood at 4,150 feet above sea level, giving the lake a depth of nearly 2,000 feet at the ice dam (more than twice the depth of Lake Superior). Traces of ancient shore lines in western Montana indicate that the lake was about 950 feet deep at present-day Missoula, 260 feet deep at Darby, and more than 1,100 feet deep at the south end of Flathead Lake. The glacial lake's eastern shore was some place east of Drummond. The Drummond area itself was beneath nearly 200 feet of water."

"Eventually, the lake level reached the lip of the ice dam and began to overflow. One can only guess at the details from this point until the dam was breached completely, but some aspects of the event can be surmised. The overflowing stream must have cut deeply into the ice. As the outlet was quickly lowered, the water roared through the breach, probably widening the channel very rapidly by undercutting the sides until the dam collapsed. No doubt huge icebergs were ferried away by the stream. Within a very short time—perhaps no more than a day or two—the ice dam was destroyed and the contents of the lake were released."

Whitcomb, John and Henry Morris. *The Genesis Flood the Biblical Record and Its Scientific Implications*. Presbyterian and Reformed Publishing Co. Phillipsburg NJ. 1961.

The geologic implications of the flood. A good overview of the concept of uniformitarianism versus catastrophism.

Woodmorappe, John. *Noah's Ark: a Feasibility Study*. Institute for Creation Research. Santee, CA. 1996.

Logistic of the Flood. The carrying capacity of the ark.

Whiston, William. *A New Theory of the Earth*. Arno Press. New York. 1978 (originally published in 1696).

The cometary origin of the flood. William Whiston was a friend of Edmund Halley, the discoverer of Halley's comet, and Sir Isaac Newton the formulator of the law of gravity. After Newton died Whiston worked in Newton's laboratory. He also translated *the Complete Works of Flavius Josephus*.

Noah's Ark (Veracity)

Bantin GC. Sanders PD. Animal caging: is big necessarily better? *Animal Technology*. 40:1:45-54. 1989.

Explains how animals are less stressful in smaller cages. Show how smaller cages can reduce injuries to animals and handlers. Gives the ideal cage size for small rodents, primates, and other types of animals used in research. Discounts the myth by animal rights groups that a bigger cage is better. Four points covered in their research includes; (1) the physiological requirements, (2) the psychological needs, (3) stocking densities, and (4) a point often overlooked the ergonomics of cage design. Has many source articles and citations.

Butler JL. McColly HF. Factors affecting the pelleting of hay. *Agricultural Engineering*. 44:2:44-46. August 1959.

Shows the great amount of labor needed to handle large loose hay. Labor can be greatly reduced by the pelleting of hay. If Noah compacted the hay of sufficient moisture with a proper amount of mechanical pressure hay could have been made into pellets. This would have relieved much of the labor.

Bruce JM. Natural convection through opening and its application to cattle building ventilation. *Journal of Agricultural Engineering Research*. 23:151-67. 1978.

Abstract—"It is clear from historical and contemporary records that the ventilation of cattle building by natural convection is not well understood. The importance is however widely recognized. A theory of natural convection through openings is developed and application is demonstrated to openings with geometries relevant to building. The effect of superimposed forced convection is shown...Design procedures are given for open-ridge and slotted roof system of ventilation for cattle buildings."

Shows that a very efficient design for buildings housing large amount of animals is structure incorporating a ridge vent with under eaves vents. Demonstrates that with the proper size opening placed at the appropriate locations a large concentration of animals can be kept dry yet properly ventilated.

Carson HL. Templeton AR. Genetic revolutions in relation to speciation phenomena: the founding of new populations. *Annual Review of Ecology and Systematics*. 15:97-131. 1984.

"The extreme, naturally occurring case, wherein a population is founded by a single such propagule, is not only biologically feasible, but provides a degree of operational simplicity for theoretical purposes" (p. 100).

Cheeke PR. Patton NM. Lukefahr SD. McNitt JI. *Rabbit Production*, 6th ed. Interstate Printers. Danville IL. 1987.

Gives information on self-watering, self-feeding, and self-cleaning technologies as applicable to large-scale rabbit raising. These principles could be applied to the animal technologies that were used in the ark. Also shows the principles in constructing cage systems utilizing this information.

Collins LG. Fasold DF. Bogus "Noah's Ark" from Turkey exposed as a common geologic structure. *Journal of Geosciences Education*. 44:439-444. 1996.

A critique of the Noah's Ark site in Dogubayazit, Turkey, which is supported by ark researcher Ron Wyatt. This paper reveals that this ark site is merely a geologic formation.

Abstract—"A natural rock structure near Dogubayazit, Turkey, has been misidentified as Noah's Ark. Microscopic studies of a supposed iron bracket show that it is derived from weathered volcanic minerals. Supposed metal-braced walls are natural concentrations of limonite and magnetite in steeply inclined sedimentary layers in the limbs of a doubly plunging syncline. Supposed fossilized gopherwood bark is crinkled metamorphosed peridotite. Fossiliferous limestone, interpreted as cross cutting the syncline, preclude the structure from being Noah's Ark because these supposed "Flood" deposits are younger than the "Ark." Anchor stones at Kazan (Arzap) are derived from local andesite and not from Mesopotamia."

Collin DH. Was Noah's Ark stable? *Creation Research Society Quarterly*. 14:83-87. 1977.

"The conclusion drawn from the investigation is that the ark was extremely stable, well able to withstand the forces hurled against it in the flood...These curves show that the ark was extremely stable, even in 210 knots winds (245 mph), three time hurricane force."

Connan J. Use and trade of bitumen in antiquity and prehistory: molecular archaeology reveals secrets of past civilizations. *Phil. Trans. R. Soc. London. B*. 354:33-50. 1999.

A comprehensive article explaining how bitumen enjoyed widespread use in the ancient world. Explains how it was used as a waterproofing agent, mortar, glue, mastic, preservative, medicine, and pipe sealant. The dates given show that it was widely used during the time of the Genesis flood.

Clutton-Brock J. The process of domestication. *Mammal Review*. 22:2:79-85. 1992.

European horses once living in South America were introduced by visitors to the New World. These vast herds were started by five original founders.

Ducks Unlimited. 67:4:14. July/August 2003. p. 14.

"...waterfowl, perhaps more than any other avian family, are capable of an extreme genetic capacity for hybridization. Over 400 kinds of interspecies hybrids have been reported for the waterfowl family alone.' The most common progenitor of hybrid waterfowl is the mallard, which, worldwide, had been known to breed with as many as 40 other species."

Flux JEC. Fullagar PJ. World distribution of the rabbit *Oryctolagus cuniculus* on islands. *Mammal Review*. 22:3/4:151-205. 1992.

Large rabbit populations that exist on various Australian islands were founded by single pairs.

Gibbons A. On the many origins of species. *Science*. 273:1496-99. 1996.

New species can form right next to the parent species. They can be formed by simple differences such as the type of food they eat. Thus speciation can be quite rapid and does not necessarily require physical boundaries. This also shows that species are simply a genetic subset of the Biblical kind.

Hong SW. Na SS. *et al.* Safety Investigation of Noah's Ark in a Seaway. *Creation Ex Nihilo Technical Journal* 8:1:26–35. 1994.

Reveals that the Ark was extremely stable. A total of 11 different "ark type" hulls were tested using naval architectural standards. This article contains many tables and graphs.

"Since all the hull forms except hull #1 had sufficient overturning stability compared to ABS's (American Bureau of Shipping) criteria, we derived the first total safety index as the average of the indices of sea-keeping safety and structure safety. This revealed that the Ark had the second best hull design, with the best hull design in this case being hull #1, which had the worst overturning."

"Similarly, from the results of roll response as shown in Figure 6, we can conclude that flooding of the Ark would not have occurred until the waves became 47.5m high (~155 ft), when the limiting heeling angle was 31°."

"In conclusion, the Ark as a drifting ship, is thus believed to have had a reasonable-beam-draft ratio for the safety of the hull, crew and cargo in the high winds and waves imposed on it by the Genesis Flood...The voyage limit of the Ark, estimated from modern passenger ships' criteria reveals that it could have navigated sea conditions with waves higher than 30 meters (~100 ft)."

Koller J. Baumer U. Mania D. High-tech in the Middle Palaeolithic: Neandertal-manufactured pitch identified. *European Journal of Archaeology*. 4:3:385-97. 2001.

Reveals how the people of the Palaeolithic (Neanderthals), manufactured and used birch bark pitch as a high tech glue. This would have implications for the construction of structural beams and other wooden components (gopherwood) in the production of Ark.

Lange KE. Wolf to woof—The evolution of dogs. *National Geographic*. 3-11, January 2002.

"Less than 14,000 years separated them: the wolf—the dog's ancestor—and the Maltese, one of hundreds of breeds of today's *Canis familiaris*. Human transformed wild canids into the first domesticated animal—the tamable, trainable, incredibly variable dog."

"At the molecular level not much changed at all: The DNA makeup of wolves and dogs is almost identical."

"No other species displays such diversity as the dog. Rayon Coppinger calls the dog a shape-shifter."

Levathes, Louise. *When China Ruled the Seas-The Treasure Fleet of the Dragon Throne 1404-1433*. Simon and Schuster. New York, NY. 1994.

Skeptics of Noah's Ark often say that ships over 350 feet could not be built out of wood. According to the critics they would have undulated and would have broken apart in the open ocean. Therefore Noah's Ark at 450 feet long (18" cubit) is simply a maritime myth. Many studies have been done supposedly showing the engineering impossibility of large wooden ships. Unfortunately, unbeknownst to engineers doing these computer generated mechanical/engineering studies the Chinese were building large wooden ocean going ships more than 500 years ago. Some of these ships would have been about 500 ft long ([Needham 1971](#) and [Viviano 2005](#)).

"The largest of the ships moored off Malindi were four-hundred-foot long, nine-masted giant junks the Chinese called bao chuan (treasure ships)...Accompanying the large junks on their mission were nearly a hundred supply ships, water tankers, transports for cavalry horses, warships, and multi-oared patrol boats with crews numbering up to 28,000 sailors and soldiers. It was a unique armada in the history of China-and the world-not to be surpassed until the invasion fleets of World War I sailed the seas... Early calculations of the size of the treasure ships were based on a chi of 12.129 inches (Ming gong bu chi) or 13.338 inches (Huai chi), which were the standards in Jiangsu province for the building of shachuan. Based on these chi, a ship of 44 zhang (1 Zhang equals 10 chi) would be 448.8 to 493.5 feet long...Most scholars now believe that the treasure ships, though built in Nanjing, were fuchuan in their basic design, and that the Longjiang shipwrights, the majority of whom were from the coastal provinces, would have brought their tools with them. Based on actual shipbuilding chi unearthed in Fujian province, which varied in length from 10.53 to 11.037 inches, the largest of the treasure ships is now thought to have been between about 390 and 408 feet long and 160 to 166 feet wide still one of the largest wooden sailboats ever built anywhere in the world."

"In the Tang dynasty ships were 20 zhang long, and in the Song they approached 40 zhang. The ke zhou (guest ships) of the Song emperor Huizong were 10 zhang long and 2.5 zhang wide; and the shen zhou (spirit ships) he sent on emissarial missions were reported to be three times as big. The ships of Khubilai Khan each had more than ten sails and were said to hold a thousand men. On the large lake west of Hangzhou, grand pleasure boats from the Song dynasty called Xihu zhou chuan (West Lake ships) were presumed to be more than 50 zhang long. They were skillfully made with engraved railings and painted pillars. They moved through the water with great stability and made the passengers feel as if they were on dry land."

Maier TW. Anomaly or Noah's Ark. *Insight*. pp. 10-14, 25-27. November 20, 2000.

The ark anomaly ([Montesano 1992](#)) as the CIA calls it has been photographed several times. Once in 1949 by an airplane, next in 1956 by a high flying U-2, and by various satellites in the 1970's and 1990's. *Insight Magazine* here reports on the analysis of photos that were taken by a high resolutions satellite (IKONOS). The pictures were privately funded in an attempt to lay to rest the claims of what exactly is on Mt. Ararat. *Insight Magazine* hired seven photo analysts to evaluate the pictures. Some experts say the anomaly is manmade others say it is natural, their descriptions follows.

"There still is no certainty about what the anomaly is, but four of the experts say it could be man-made; two believe it's a rock; and one calls the evidence inconclusive. Gomez says the 1-meter resolution is not high enough to make a final determination, although his review of just the 1949 photographs suggests it may be man-made because, he says, nothing like it appears to exist elsewhere on the mountain."

"No way, counters El-Baz: 'There is no anomaly. The displayed features are part of the natural setting that might characterize any high-elevation peak, such as that of Mount Ararat or any glacier in a mountainous area.' Paiva disagrees. 'There is an anomaly up there,' he says firmly. While Paiva - who had access to the 1973 KH-9 and 1976 KH-11 hits but refuses to talk about what's in those images because they are classified - he isn't buying the denials. 'There's something up there and that's the only issue,' he says. 'I'm not saying it's the Ark. But there is something up there.' Hsu says the predominant features suggest the shape of a structure below might be man-made. 'The most interesting feature is that some of them appeared to form an almost-90-degree edge, similar to a boxlike structure,' he says. 'They appear strongly, suggesting that man-made structures are underneath the snow, in particular, and when triangulated with the 1949 DIA photo since they all appear consistent.'"

Miller EC. Hodges EF. One man feeds 5,000 cattle or 60,000 broilers. *Yearbook of Agriculture (USDA) for 1970*. p. 57.

Shows the feasibility of how a few people can care for many animals.

Montesano AP. The Ararat Anomaly. Earth Observer Magazine. vol. 7. no. 2. February 1992.

Although it comes to no firm conclusions this article details the recent CIA and other governmental sightings of an anomaly on Mt. Ararat. High altitude spy planes have photographed this anomaly ([Maier 2000](#)) which some claim is Noah's Ark. It also details the destruction of the Monastery of St. Jacob. These monks had a flourishing tourist/pilgrim trade in Noachian artifacts, which were undoubtedly fabrications ([Wright 1970](#)). This article gives a good overview of the different sightings and visits to Noah's ark by various explorers, none of which are confirmed as authentic.

"Noah's Ark' may reside on a site first identified by Defense Intelligence Agency aerial images. Further evidence thought to be captured on Spot satellite image of Mount Ararat... On June 17, 1949, a U.S. Air Force plane was flying a classified photographic mission over Mount Ararat. As the plane reached the 15,500 foot level, about a mile away from the mountain, its cameras inadvertently recorded - in two frames - a massive linear shaped anomaly protruding out from a glacial ice cap at the southwest edge of the nearly mile long western plateau... In September 1973, on the eve of the Yom Kippur War, a CIA reconnaissance satellite reportedly captured images of a 'boat like object' on Mount Ararat."

"In 1829 Dr. Frederich Parrot, a German professor of natural philosophy from Estonia, visited St. Jacob's monastery at the 7,000 foot level on the northwest side of the mountain at the village of Ahora, prior to his historic climb to the summit. The monastery had stood for 800 years. There he wrote in his subsequent book that the monks showed him wood, manuscripts and artifacts from Noah's Ark. Eleven years later in 1840 the monastery and all of the people in the nearby village of Ahora were obliterated in the cataclysm caused by Mount Ararat's 'last volcanic eruption,' which left a deeply scarred gorge on the north side of the mountain nearly a mile deep - the Ahora Gorge."

Morell V. Starting Species with third parties and sex wars. Science. 273:1499-1501. 1996.

"It often takes a powerful barrier to make a new species...But three wasp species may have been pulled apart by nothing stronger than three distinct strains of bacteria living in their guts...the bacteria in the females destroy male DNA from different species, keeping cross-species mating from producing offspring. And perhaps the wasps aren't so unusual. Evolutionary biologist are fond of noting that in *On the Origin of Species*, Charles Darwin actually wrote very little about how species originate"

Needham, Joseph. Science and Civilization in China. Volume 4: Physics and Physical Technology. Part 3: Civil Engineering and Nautics. Cambridge University Press. London, England, and New York. p. 481. 1971.

Many Chinese 15th century treasure ships have been reported to be 400-500 feet long. These were considered exaggerations ([Levathes 1994](#) and [Viviano 2005](#)). This book reveals that in 1962, an actual rudderpost of one of these great ships was found at the Ming shipyards. It was more than 36 feet long. It is estimated that the ship that utilized this size of rudderpost would have been between 480-530 feet long, depending on the draught of the ship.

Sherman HB. Raccoons of the Bahama Islands. Journal of Mammalogy. 35:1:126. 1954.

The current population of raccoons on the Bahamas Islands was founded by one pair of raccoons.

Thorne A. Not out of Africa. *Discover Magazine*. 23:8. August 2002.

"Thorne says his lifelong study of animals has taught him otherwise. In captivity, for example, jaguars have mated with leopards and pumas and produced fertile female offspring—although all three animals supposedly belong to different species. Polar bears and brown bears, wolves and coyotes, dromedaries and Bactrian camels also cross-mate. Darwin himself dismissed species as a term that is 'arbitrarily given, for the sake of convenience.'"

Vaughan TA. *Mammalogy* 3rd ed. Suanders College Publishing. Forth Worth. 1986.

The subject of hibernation and topor is discussed. This article shows that all animals reduce their metabolism when food is scarce or during changes in light or temperature.

"A number of energy-saving physiological changes occur during...topor. These include lowering of the heart rate, progressive vasoconstriction, suppression of shivering, reduction in breathing rate, and lowered oxygen consumption...Entry into topor by some small mammals seems to be triggered by lack of food, but in others entry is spontaneous..."

Viviano F. China's great armada. *National Geographic*. 28-53, July 2005.

Zheng He was a great admiral of the Chinese Navy. Under his command the Chinese 600 years ago launched seven naval expeditions from Nanjing. These expeditions traded with the countries of India, Iran, and Africa. Large ships were constructed for this purpose. Many scoffers of the Genesis account of the flood vehemently state that it would be impossible for large ships over 300 feet to have been built. Admiral Zheng He built ships this large and larger ([Levathes 1994](#) and [Needham 1971](#)).

"At the bottom of a muddy trench on the south bank of the Yangtze River in Nanjing, workers unearthed a wooden steering post 36 feet long with evidence of an attached rudder whose surface area worked out to a mind-boggling 452 square feet—big enough to turn a vessel the size of the legendary baochuan, meaning "treasure ships," of the Ming armada. The fleet commanded by Zheng He counted as many as 62 of these gargantuan vessels, which some nautical experts believe may have measured up to 400 feet in length and 170 feet across the beam—with nine masts, 50,000-square-foot main decks, and a displacement of at least 3,000 tons, ten times the size of Vasco da Gama's flagship. Scholars disagree on the baochuan's actual size, but even at far more modest estimates they were surely the largest wooden ships ever launched. The baochuan were escorted by 370-foot-long, eight-masted "galloping-horse ships," the swiftest in the fleet, 280-foot supply ships, 240-foot troop transports, and agile 180-foot combat junks, according to interpretation of Ming sources. More than 300 vessels are believed to have sailed on Zheng's main voyage to what the Chinese call Xi Yang, the Western ocean. The ship were manned by nearly 30,000 sailor and marines, seven grand eunuchs and hundreds of other Ming officials..."

Weiland, Carl. Diseases on the ark. *Creation Ex Nihilo Technical Journal*. 8:1:16-18, 1994.

An answer to the critics' objections that the diseases of mankind had to be extant in all the crew of the ark.

Wright EG. The Ark Again? Newsletter No. 3. American School of Oriental Research. p.1-2. October 1970.

This article brings to light that what many of the ark explorers have been finding on Mt. Ararat is not the Ark. It details that the monks of the area, Monastery of St. James (or Jacob), built a replica of the ark (see [Bailey 1989](#) and [Montasano 1992](#)).

"Sometime during the age of the Pilgrim trade, the vast mountain on northeastern Turkey was signalized as the spot where Noah and his family disembarked from the Ark. Hence, a monastery, the Monastery of St. James, was built at the base of the mountain and one could be shown where the Garden of Eden had been, where Noah's wife was buried, and the place where Noah planted the first vineyard and even the exact vine of Noah, before a mountain slide of rock, ice and snow covered the whole area of the Monastery in the earthquake of 1840...This would suggest that the industrious monks of the monastery, wishing to further their own livelihood by the tourist trade, may indeed have built something up in the mountain that with great difficulty could be seen and shown to be the 'Ark.'"

Genesis Account (Veracity): Ancient Atmosphere, Magnetic field, etc.

Baumiller TK. Enough remains to work with. *Science*. 283:1271. 1999.

This is a journal review of the book *The Adequacy of the Fossil Record*, edited by S.K. Donovan and C.R.C. Paul, 1998. In the review of the book it states that; "Several chapters...suggest that the record of species is surprisingly complete, preserving roughly 10% of species that have ever existed. Paul argues that this level of completeness compares favorably in magnitude to that accepted in other disciplines...The contributors demonstrate that the fossil record preserves data adequate for examining a wide range of evolutionary questions."

Many evolutionists claim that the fossil record is incomplete and when more fossils are available support for the evolutionary theory will be obvious. Creationists, on the other hand, say that there are no transitional fossils and therefore evolution is not correct. This reviews shows that the creationist viewpoint is more correct. There are indeed enough fossils available at the present time.

Berner RA. Atmospheric oxygen over Phanerozoic time. *Proceedings of the National Academy of Science*. 96:10955-57. 1999.

Gives evidence for high levels of oxygen in the earth's past. Indicates that atmospheric O₂ levels could have been as high as 35+%. These high levels of oxygen would have effects the plants and animals existing at that time.

Byrd RE. Exploring the Ice Age in Antarctica. *National Geographic*. p. 456-7. October 1935.

"When the South Pole Suburb was Semitropical (Section title): In the moraines they passed many hours picking over the fragments tumbled from the mountainside. Invariably these finds included plant fossils, leaf and stem impressions, coal, and fossilized wood. Here, at the most southern known mountain in the world, scarcely 200 miles from the South Pole was found conclusive evidence that the climate in Antarctica was once temperate or even subtropical."

Coe RS. Prevot M. Evidence suggesting extremely rapid field variation during a geomagnetic reversal. *Earth and Planetary Science Letters*. 92:292-98. 1989.

Appenzeller T. A conundrum at Steens Mountain. *Science*. 255:31. 1992.

According to geologic theory magnetic reversals take thousands of years to occur and can be used to date various strata. These articles report on the rapid field reversals that were captured in different layers of cooling magma. The data reveals that the poles can shift as much as 50° in about 15 days. This is thousands of time faster than had previously been thought.

Calabrese EJ. Baldwin LA. Radiation hormesis: the demise of a legitimate hypothesis. *Human and Experimental Toxicology*. 19:76-84. 2000.

Discuss radiation hormesis—the benefits of low dose radiation therapy. Even though it is a viable position and is making a comeback this paper shows the political and societal factors that led to it demise in the mid 1900s.

"This paper examines the underlying factors that contribute to the marginalization of radiation hormesis in the early and middle decades of the 20th century. The most critical factor affecting the demise of radiation hormesis was a lack of agreement over how to define the concept of hormesis and quantitatively describe its dose-response features."

Chapelle G. Peck LS. Polar gigantism dictated by oxygen availability. *Nature*. 399:114-115. 1999.

This paper shows that the present day size of polar species of benthic crustaceans is directly related to oxygen availability. Polar gigantism has been attributed to low temperature and metabolism. In polar marine organisms it is a result of dissolved O₂ levels in the water.

"We obtain strong relations between external oxygen concentrations and length...Oxygen supply may have lead to insect gigantism in the Carboniferous period, because oxygen was 30-35%. The demise of these insects when oxygen content fell indicates that large species may be susceptible to such change."

DeConto RM. Pollard D. Rapid Cenozoic glaciation of Antarctica induced by declining atmospheric CO₂. *Nature*. 421:245-248. 2003.

Shows how declining CO₂ concentration caused the spread of the Antarctic ice sheets. As the CO₂ declined the greenhouse effect was negated and a cold climate began.

"The sudden, widespread glaciation of Antarctica and the associated shift towards colder temperatures at the Eocene/Oligocene boundary (34 million years ago) is one of the most fundamental reorganizations of global climate known in the geologic record...In our model, declining Cenozoic CO₂ first leads to the formation of small, highly dynamic ice caps on high Antarctic plateaux. At a later time, a CO₂ threshold is crossed, initiating ice-sheet height/mass-balance feedbacks that cause the ice caps to expand rapidly with large orbital variations, eventually coalescing into a continental-scale East Antarctic Ice Sheet."

Deutsch A. *et al.*, Unaltered cosmic spherules in a 1.4-Gyr-old sandstone from Finland. *Nature*. 395:146-48. 1998.

Meteorites are almost nonexistent in sedimentary rocks. If the Earth's sedimentary rock was laid down quickly and then quickly covered over by successive layers there would have been little

time for meteorites to have impacted the buried layers. Only the uppermost sedimentary layer has meteorites. This shows that sedimentary rock has formed very quickly via flood mechanisms.

"...as micrometeorites with high terrestrial residence ages are rarely known."

Dudley R. Chai P. Animal flight mechanics in physically variable gas mixtures. *Journal of Experimental Biology*. 199:1881-85. 1996.

"Intriguingly, the Permian decline in oxygen levels may have contributed to the dramatic end-Permian disappearance of giant arthropod taxa."

This study shows the effects that air density would have on the flight characteristics of flying organisms. It reveals that flight is easier in a hyper dense atmosphere. This coupled with the increased oxygen levels in the past could account for some of the gigantism displayed in the fossil record.

Dudley R. Atmospheric Oxygen, giant Paleozoic insects and the evolution of aerial locomotor performance. *Journal of Experimental Biology*. 201:1043-1050. 1998.

Hyperoxia in the Paleozoic would have allowed the existence of large insects. Some dragonfly fossils have wingspans of more than two feet. The development of these large insects would have only been possible in a hyperoxia condition. The author's data shows a concentration of oxygen at 35% as compared to the present level of 21%. Other data indicates that the atmospheric pressure would have also increased.

Feinendegen LE. Pollycove M. Biologic responses to low doses of ionizing radiation: detriment versus hormesis-part 1 dose responses of cells and tissue. *Journal of Nuclear Medicine*. Newsline. 42:7:17N-27N. 2001.

Study showing the benefits of low levels of radiation. Disputes the LNT (Linear No Threshold) model of most of the governmental agencies (see [Pollycove 2001](#) and [Muckerheide 2000](#)).

"Ionizing radiation causes DNA damage proportional to dose. However, low doses of low-LET (Linear Energy Transfer) radiation but not high doses to cells initiate protective responses (adaptive responses) in the hit cells. Bystander cells may respond similarly. These appear with a delay and temporarily induce: (a) cellular defenses (radical detoxification); (b) DNA repair (various pathways); (c) cell removal (mainly by stimulated immune response); and (d) apoptosis, which also occurs at high doses. Because at low doses endogenous DNA damage far outweighs radiation-induced DNA damage, low doses and dose rates appear to mainly protect against endogenous DNA damage. It is generally accepted that cancer induction appears proportional to the degree of DNA damage. Therefore, low-dose-induced protection mainly against endogenous DNA damage should reduce the "natural" cancer incidence. This supports some epidemiological observations. For these reasons, the LNT (Linear No Threshold) hypothesis on radiation-induced cancer appears invalid and should be reexamined."

Fetner RH. Ozone-induced chromosome breakage in human cell cultures. *Nature*. 793:4830:793-4. 1962.

In this study chromosome breakages were caused by exposure to ozone. The chromatid breakages were identical to those produced by radiation. Ozone is a component of the upper atmosphere and is created by cosmic rays. After its creation ozone keeps harmful ultraviolet light

(UV) from reaching the surface of the earth. If the present day atmosphere is subject to more mixing and the amount of cosmic rays is varied from past levels more ozone would be moved into the lower atmosphere. With less ozone in the upper atmosphere more cosmic ray would penetrate to the surface of the earth. This low level ozone and increased surface UV radiation would cause chromosomal mutations and shortened life spans.

Fisher LW. Growth of Stalactites. *Journal of the Mineralogical Society of America*. 19:9:429-31. 1934.

Study of Stalactite growth showing that they can form very quickly in manmade structures.

Gentry RV. Radiohalos in radiochronological and cosmological perspective. *Science*. 184:62-66. 1974.

Abstract—"New photographic evidence, data on halo ring sizes, and x-ray fluorescence analyses provide unambiguous evidence that polonium halos exist as a separate and distinct class apart from uranium halos. Because of the short half-lives of the polonium isotopes involved, it is not clear how polonium halos may be explained on the basis of currently accepted cosmological models of Earth formation."

An examination of many ^{210}Po , ^{214}Po , and ^{218}Po radiohalos. These radiohalos some with extremely short half-lives (e.g. ^{214}Po with a half-life of 2×10^{-4} sec) are found scattered throughout the earth's basement rocks. They have been formed by alpha decay. They show no decay halos for the elements they decayed from, indicating that they were created instantaneously and in place.

Graham JB. Dudley R. *et al.* Implication of the late Paleozoic oxygen pulse for physiology and evolution. *Nature*. 375:117-20. 1995.

Abstract—"The late Paleozoic was marked by significant changes in atmospheric chemistry and biotic composition. Geochemical models suggest a marked increase and then decline of atmospheric oxygen and associated shifts in the concentration of carbon dioxide. Although the actual magnitude of these changes is uncertain, the pulse of oxygen concentration may have reached a maximum of 35% and then dropped to 15% (compared with the present 21%). This oxygen pulse may have influenced the evolution of major groups of organisms."

Gregg JW. Jones CG. Dawson TE. Urbanization effects on tree growth in the vicinity of New York City. *Nature*. 424:183-87. 2003

Ozone levels affected the rates of tree growth. Trees grown in urban areas where the ozone is less concentrated grew larger than trees grown in rural areas where ozone is more abundant; this is contrary to what was expected. Ozone is toxic ([Fetner 1962](#)) and this study shows that trees grow better in an area that has lower ozone levels. Lower ozone levels helped trees grow more biomass even when the surrounding area was more polluted such as New York City. The atmospheric level of ozone in the past would have implication for the large amounts and sizes of the pre-Noachian vegetation.

Abstract—"We grew the same cottonwood clone in urban and rural sites and found that urban plant biomass was double that of rural sites. Using soil transplants, nutrient budgets, chamber experiments and multiple regression analyses, we show that soils, temperature, CO_2 , nutrient deposition, urban air pollutants and microclimatic variables could not account for increased growth in the city. Rather, higher rural ozone (O_3) exposures reduced growth at rural sites."

"Multiple regression analysis showed that final season biomass was significantly inversely related to ambient O₃ exposures across all field sites and years of experiments, accounting for 93% of variation...Ozone was the single overriding factor accounting for observed growth differences..."

Harrison JF. Lighton RB. Oxygen-sensitive flight metabolism in the dragon fly *Erythemis simplicicollis*. The Journal of Experimental Biology. 201:1739-44. 1998.

"However, flight metabolic rate was affected by ambient oxygen levels...suggesting that ambient oxygen level influences flight muscle oxygen partial pressure and the vigour of flight. These are the first data to show oxygen limitation of flight metabolism in a free-flying insect. A low safety margin for oxygen delivery during dragonfly flight is consistent with a previous hypothesis that atmospheric hyperoxia facilitated gigantism in Paleozoic protodonates."

Hoeijmakers JHJ. Genome maintenance mechanisms for preventing cancer. Nature. 411:366-374. 2001.

Genetic mutations and cancers are caused by injury to the body's DNA. These can include toxins and natural radiation. This paper outlines the source of these injuries and how the body repairs damaged DNA. Mutations, cancers, and other genetic abnormalities occur when the body can no longer repair the damaged genetic blueprint. This has implications for quality of life and longevity.

"The physicochemical constitution of our genes does not guarantee life-long stability or proper function. A perplexing diversity of lesions in DNA from...environmental agents such as the ultraviolet (UV) component of sunlight, ionizing radiation and numerous genotoxic chemicals (can) cause alterations in DNA structure, which, if left unrepaired, may lead to mutations that enhance cancer risk."

"The outcome of DNA damage is diverse and generally adverse (Fig. 1b). Acute effects arise from disturbed DNA metabolism, triggering cell-cycle arrest or cell death. Long-term effects result from irreversible mutations contributing to oncogenesis."

"Genetic degeneration is linked intimately with all aspects of maintenance of DNA integrity and gene function and is fuelled by the continuous erosion of the genome by environmental and endogenous genotoxic agents."

Hsu KJ. When the Mediterranean dried up. Scientific American. 227:6:27-36. December 1972.

This article indicates that the Mediterranean was dried up and refilled several times. This created large deposits of salt and salt domes. Large canyons comparable to the Grand Canyon have been found under the silt of the Rhone river in southern France. In an attempt to explore the geologic region near the Nile river for the Aswan Dam Soviet scientists discovered a deep gorge filled in with sediments. Both of these gorges had cut through bottom layers of solid granite.

"It was entirely unexpected, however, that salt domes would be discovered under the abyssal plains of the Mediterranean. Where could the salt have come from?"

"One can picture the desiccated Mediterranean as a giant bath tub, with the Strait of Gibraltar as the faucet. Seawater roared in from the Atlantic through the strait in a gigantic waterfall...Cascading at the rate of 10,000 cubic miles per year, the Gibraltar falls would have been 100 times bigger than Victoria Falls and 1,000 times more so than Niagara."

"Near the end of the 19th century a deep gorge buried under the plain of the Valence in southern France was discovered during a search for ground water. The gorge was cut into hard granite to a depth of hundreds of feet below sea level. Filling the gorge are Pliocene oceanic sediments, which in turn are covered by the sands and gravels of the Rhone river. When the gorge was first discovered, it was found to extend for some 15 miles between Lyons and Valence. Eventually the buried channel was traced for more than 100 miles downstream to La Camargue in the Rhone delta, where the valley was reached by drilling 3,000 feet below the surface. Obviously the modern Rhone is a lazy weakling compared with its ancestor, which sculptured a system of gorges almost comparable in size to the Grand Canyon of the Colorado. What caused the deep incision of the Rhone?"

"In an effort to find hard rock for the dam's foundation 15 boreholes were drilled. To the Russians' amazement they discovered a narrow deep gorge under the Nile valley, cut 700 feet below sea level into hard granite...In the Nile delta boreholes more than 1,000 feet deep were not able to reach the bottom of the old Nile canyon. Chumakov estimated the depth of the incision there might reach 5,000 feet, and he visualized a buried Grand Canyon under the sands and silts of the Nile delta."

"The late Jacques Bourcart of the University of Paris reported in 1950 the discovery of numerous submarine canyons indenting the continental margins off the coast of France, Corsica, Sardinia and North Africa. The canyons are typically river-cut and are filled with alluvial gravels. Most of them can be related to a river on land and can be traced to a depth of 6,000 or 8,000 feet at the edge of the abyssal plain. Similar canyons have been found in all parts of the Mediterranean. Their genesis had never been satisfactorily explained until it was realized that the Mediterranean was desiccated six million years ago."

Inglis DR. Dynamo theory of the earth's varying magnetic field. *Reviews of Modern Physics*. 53:3:481-496. 1981.

A good overview of the dynamo theory of the earth magnetic field. Various forms of the dynamo theory are present with the aid of many illustrations and pictures. This theory is in harmony with the evolutionary viewpoint of slow changes over vast eons of time (contrast this with [Stacey 1967](#)).

Ishii Y. *et al.* Efficacy of topical hyperbaric oxygen for refractory foot ulcer. *Material Science and Engineering*. C 24:329-32. 2004.

Two cases of severe foot ulcers (wounds) were treated with hyperbaric therapy. In this case it was topical treatment or simply placing a plastic bag over the wound and filling it with 100% oxygen. The results were dramatic. Both of the ulcers, one that had been treated previously for seven years by standard medical therapies but to no avail, healed up completely. This article contains graphic pictures that show the open ulcers and their later complete healing (compare with [Kalani 2002](#) and [von Heimburg 2001](#)).

Abstract—"Topical hyperbaric oxygen (topical HBO), used for moderate acute and chronic open wounds, is one of several strategies utilized to accelerate the healing process. We used topical HBO with a polyethylene bag filled with oxygen and monitored the oxygen concentration in the bag during the treatment. We also tried to treat two cases of severe refractory foot ulcer with this method, as an alternative to flap surgery or amputation. The result was that the oxygen concentration level has become 90% after 15 min and the level was kept over 90% after this time. The infection healed within 3 weeks and the ulcers were closed in both cases successfully. If topical HBO can be enhanced, the epithelialization may be beneficial not only as a useful treatment for severe ulcers, but also as a device in the field of tissue engineering."

Kalani M. *et al.* Hyperbaric (HBO) therapy in treatment of diabetic foot ulcers Long-term follow-up. *Journal of Diabetes and Its complications.* 16:153-58. 2002.

A study of a diabetic group suffering from foot ulcers was undertaken. 76% of those receiving HBO therapy had completely healed as compared to only 48% of those that received conventional medical treatment. Of the HBO group only two went on to amputation as compared to seven amputations for those receiving standard medical care (compare with [Ishii 2004](#) and [von Heimburg 2001](#)).

Abstract—"...The aim of the present study was to investigate the long-term effect of HBO in treatment of diabetic foot ulcers. Methods: Thirty-eight diabetic patients (30 males) with chronic foot ulcers were investigated in a prospective study. The mean age was 60 ± 13 years and the mean diabetes duration 27 ± 14 years. All patients were evaluated with measurements of transcutaneous oxygen tension (tcPO₂), peripheral blood pressure, and HbA_{1c}. All patients had a basal tcPO₂ value lower than 40 mmHg, which increased to ≥ 100 mmHg, or at least three times the basic value, during inhalation of pure oxygen. Seventeen patients underwent 40–60 sessions of HBO therapy, while 21 patients were treated conventionally. The follow-up time was 3 years. Results: 76% of the patients treated with HBO (Group A) had healed with intact skin at a follow-up time of 3 years. The corresponding value for patients treated conventionally (Group B) was 48%. Seven patients (33%) in Group B compared to two patients (12%) in Group A went to amputation...Additional studies are needed to further define the role of HBO, as part of a multidisciplinary program, to preserve a functional extremity, and reduce the short and long-term costs of amputation and disability.

Knight DR. Schaffartzik W. *et al.* Effects of hyperoxia on maximal leg O₂ supply and utilization in men. *Journal of Applied Physiology.* 75: 2586-2594. 1993.

Subject breathing 100% oxygen (normal atmospheric oxygen is 21%) increased the oxygen reaching the leg muscles by 8.1% and total oxygen delivery by 10.9%. This proves that the amount of oxygen reaching the leg muscles is limited by the oxygen supply and not the respiratory system.

Landis, G. Understanding Our Planet Through Chemistry. United States Geological Survey Online Reports. January 15, 2001. <http://minerals.cr.usgs.gov/gips/na/0amber.htm>

"Minute bubbles of ancient air trapped by successive flows of tree resin during the life of the tree are preserved in the amber. Analyses of the gases in these bubbles show that the earth's atmosphere, 67 million years ago, contained nearly 35 percent oxygen compared to present levels of 21 percent. Results are based upon more than 300 analyses by USGS scientists of Cretaceous, Tertiary, and recent-age amber from 16 world sites. The oldest amber in this study is about 130 million years old."

Lindahl T. Instability and decay of the primary structure of DNA. *Nature.* 362:709-714. 1993.

Abstract—"Although DNA is the carrier of genetic information, it has limited chemical stability. Hydrolysis, oxidation and nonenzymatic methylation of DNA occur at significant rate *in vivo*, and are counteracted by specific DNA repair processes. The spontaneous decay of DNA is likely to be a major factor in mutagenesis, carcinogenesis and ageing, and also set limits for the recovery of DNA fragments from fossils (see [Lindahl 1993](#) in DNA Studies and [Hoeijmakers 2001](#))."

"It has often been speculated that cellular ageing may be a consequence of the gradual deterioration of the covalent structure of DNA...Unless they are removed by the nucleotide excision-repair pathway, such derivatives could accumulate in DNA in vivo over several decades and contribute to human ageing."

Luckey TD. Radiobiology deception reject health. Paper 8788. Proceedings of ICON 8. 8th International Conference on Nuclear Engineering. Baltimore MD. April 2-6, 2000.

This study shows that low doses of radiation are beneficial. Benefits include increased: development, reproduction, immunity, radioresistance, acuity, and mean life span. The following are reduced: infection, sterility, heart disease, lung disease, cancer deaths, and premature death.

Abstract—"Radiobiology data shows that biological functions are stimulated at low doses of ionizing radiation, while high doses result in detrimental effects. This results in improved health, and successful treatment of medical conditions, by low to moderate radiation doses, as shown in numerous studies, in both animal experiments and human epidemiological studies...Public policy, and the public, are misled by deceptions in conducting and reporting research. The unfounded assumption that dose-response is "not inconsistent with" the "Linear No-Threshold" (LNT) hypothesis, is supported to expand radiation protection programs and funding, for no public health benefits...Deceptions occur in numerous categories, in both radiobiology and epidemiology research. Categorization and preliminary examples of such deceptions are provided."

McDonald KL. Gunst RH. An analysis of the Earth's magnetic field from 1835-1965. ESSA Technical Report IER 46-IES 1. US Govt. Printing Office, Washington. 1967.

The earth's magnetic field is presently weakening at 5% per hundred years. It is estimated that it will vanish in 3991 A.D. The earth's magnetic field affects the production of ¹⁴C, ozone, and other atmospheric variables.

Merril, Eugene H. *An Historical Survey of the Old Testament*. Baker Books. Grand Rapids, MI. 1994.

A passage in the book describes the activities of two parallel races in the 4th and 5th chapters of Genesis. "The sons of God" could not have been angels but were in fact the line of Cain that were intermarrying with the line of Seth (p. 60).

Muckerheide J. Apply radiation health effects data to contradict and overturn radiation protection policies and rules. Paper 8792. Proceedings of ICON 8. 8th International Conference on Nuclear Engineering. Baltimore MD. April 2-6, 2000.

This paper deals with the beneficial effects of low doses of radiation. The human body has been designed with defense mechanisms that deal with toxins, radiation, chemicals, and physical stresses. Just as the immune system develops immunity to infections there are indications that low levels of radiation exposure can sharpen the body's defenses and can help it to defend against more and higher doses of radiation. At very high levels of radiation the body's defenses are overwhelmed and tissues and cells breaks down. The effects of low levels of radiation on the body can be understood by examining what happens when the body encounters low levels of other potential toxins (see [Feinendegen 2001](#) and [Pollycove 2001](#)).

Abstract—"Low-dose, low-dose-rate, radiation enhances biological responses: for immune systems, enzymatic repair, physiological functions, and apoptotic removal of cellular damage, etc., enhancing biological capability and health, including prevention and removal of cancers and other diseases. Low level radiation research has also shown no adverse effects in studies with the power

to demonstrate such effects. And studies have shown beneficial biological and health effects in many substantial human biological and epidemiological studies, and animal experiments."

Muckerheide J. There has never been a time that the beneficial effects of low-dose ionizing radiation were not known. Self Published. Center for Nuclear Technology and Society at WPI Radiation, Science, and Health, Inc. 2004.

Article details the history of the benefits of low dose radiation. Includes quotes from several very old journals and manuscripts.

"Health and medical benefits of radon- and radium health spas were known for centuries. After radioactivity was discovered, this link was documented. In 1896, a few months after Roentgen published his x-ray paper, health benefits of low-dose x-rays were demonstrated; along with many reports of high-dose harm. We know now that the response described was primarily immune system stimulation. It cured and prevented diseases, especially infections and inflammations".

Mortazavi SMJ. An introduction to radiation hormesis. Self Published. Biology Division, Kyoto University of Educating, Kyoto 612-8522, Japan. 2004.

"Our radiation protection policy is based on linear extrapolation from the dose-response at a of high doses of ionizing radiation. According to the results of many worldwide studies, this assumption is not compatible with observed health effects of low levels of radiation. Obviously LNT and current radiation protection regulations exaggerate the risk of low-level ionizing radiation (in the range of 1-50 cGy) and cause radiophobia (Yalow RS 1990). It is concluded that according to new findings, the existence of radiation hormesis and adaptive response are not deniable and abandoning the LNT theory in low dose risk estimations will be a real necessity in the near future."

Plet J. Pedersen K. Jensen FB. Increased working capacity with hyperoxia in humans. *European Journal of Applied Physiology*. 65:171-77. 1992.

Human endurance time during work to exhaustion increased an average of 41% in men and women when working in a hyperoxia condition. The test participants breathed 51% oxygen during the course of the study. Normal atmospheric oxygen levels are 21%.

Pollycove M. Feinendegen LE. Biologic responses to low doses of ionizing radiation: detriment versus hormesis-part 2 dose responses of organisms. *Journal of Nuclear Medicine*. Newline. 42:9:26N-37N. 2001.

Study showing the beneficial effects of low levels of radiation on organisms. This study has ramifications for the longevity of man (see [Feinendegen 2001](#) and [Muckerheide 2000](#)).

"Acute subinhibitory low dose radiation (≤ 250 mGy) stimulates all components of the antimutagenic system, reducing the cumulative mutation load observed in aging, disease, and cancer. All statistically significant, adequately controlled epidemiologic studies of the public, medical cohorts, and occupational workers confirm low doses of radiation are associated with reduced mortality from all causes and decreased cancer mortality and may be protective against accidental high dose radiation. Low-dose body irradiation for cancer immunotherapy has been shown to be effective in rodents and humans."

Proteus Hyperbaric Chamber Systems and Management. November 11, 2000.
<http://www.hyperbaric.com>

Manufacturer of hyperbaric chambers. Hyperbaric chambers use double the air pressure and 100% oxygen as a healing therapy. Used to treat wounds, burn, cuts, etc. Increases the healing rate by 25%.

Song X. Richards PG. Seismological evidence for differential rotation of the Earth's inner core. *Nature*. 382:221-24. 1996.

Vidale JE. Dodge DA. Earle PS. Slow differential rotation of the Earth's inner core indicated by temporal changes in scattering. *Nature*. 405:445-448. 2000.

Many ancient records, from the Mayans, Hindus, and other cultures, indicate that the earth at one time had a year that was 360 days long. Examples include the Babylonians who divided the circle (year) into 360 degrees. We still use that system in geometry. This would correlate with 12 lunar cycles of 30 days each ($12 \times 30 = 360$). A comparison of the Genesis account (Gen. 7:24, 7:11, and 8:4) shows that five months consisted of 150 days. This would mean each month had 30 days. The earth now has an annual rotational period of $365\frac{1}{4}$ days. It is rotating faster now as compared to its rotation before the flood. If the earth had become denser it would rotate faster, much like a spinning ice skater rotates faster when she pulls in her arms and legs closer. Mathematically the earth day before the flood, based on a 360 day year, was 23.61 hours long. Presently the earth rotates once every 23.94 hours. The earth is rotating about 20 minutes faster per day.

The flood of Noah was a great catastrophe. There was great tectonic activity (see section on [Catastrophism](#)). This activity would cause internal friction which would generate heat and cause much of the earth's interior to melt. This melting would gravitationally settle the more denser melted elements, rocks, and minerals closer to the interior of the earth. This would cause the earth to become denser and it would spin faster. The earth's year would change from 360 days to $365\frac{1}{4}$ days in length. This would also require adjustments to the various ancient calendars.

These two articles show that the inner molten core of the earth's interior is still spinning slightly faster than the outer mantle and crust. This is a holdover from what occurred during the catastrophic flood which changed the rotation of the earth and the length of the year.

Song 1996 Abstract—"The travel times of seismic waves that traverse the Earth's inner core show a small but systematic variation over the past three decades. This variation is best explained by a rotation of the inner core that moves the symmetry axis of its known seismic anisotropy. The inferred rotation rate is on the order of 1° per year faster than the daily rotation of the mantle and crust."

Vidale 2000—"The finding that the Earth's inner core might be rotating faster than the mantle has important implications for our understanding of core processes, including the generation of the Earth's magnetic field. Here we compare scattered waves recorded in Montana, USA, from two closely located nuclear tests at Novaya Zemlya, USSR, in 1971 and 1974. The data show small but coherent changes in scattering which point toward an inner-core differential rotation rate of 0.15° per year—consistent with constraints imposed by the free-oscillation data."

"We confirm that the inner-core rotates as first claimed in 1996 but at a considerably slower rate: 0.15° per year compared to $0.5\text{—}1.1^\circ$ per year."

Von Heimburg D. *et al.* Hyperbaric oxygen treatment in deep frostbite of both hands in a boy. *Burns*. 27:404-408. 2001.

A case study of a boy with severely frostbitten fingers is detailed. This article contains graphic pictures at the beginning of treatment and also a few weeks after treatment. The boy made a complete recovery with no scarring or abnormal effects (compare with [Ishii 2004](#) and [Kalani 2002](#)).

Abstract—"An 11-year-old boy in good general health conditions suffered deep frostbite on six fingers while he was working without gloves as a beater during a hunt in Poland at an outdoor temperature of -32°C over a 4 h-period. Three days later he was first seen by a physician who planned to amputate the affected fingers. The patient was transferred by his family to our University Hospital in Aachen, Germany. We found third degree frostbite on four fingers of the right and on two fingers of the left hand. Because of the late beginning of the therapy, the patient was treated by HBO₂ according to the Marx-schema for problem wounds (2, 4 bar, total time at depth: 90 min, alternations of 100% O₂ and air breathing). HBO₂-treatment was repeated daily for 14 days. No adverse events were recorded during the course of therapy. A total recovery of the severe frostbite was observed after 14 days of HBO₂-treatment. Twenty-eight months after the injury the patient reports fully regained sensibility and no pain. The plain X-ray after this period showed no premature closure of the epiphyses or sclerosis of the metaphyses. *Conclusions:* Because of the low risk associated with HBO₂, and its potential therapeutic efficiency, HBO₂ should be recommended as adjunct therapy in the treatment of deep frostbite."

Stacey FD. Electrical resistivity of the earth's core. *Earth and Planetary Science Letters*. 3:204-06. 1967.

Contains an excellent summary of the "Free Decay Theory" of the earth's magnetic field. Also describes the effects impurities in the core's molten liquid would have on the electrical properties of the core. This is the theory supported by many creationists and catastrophist as an explanation for the changes in the magnetic field of the earth (contrast this with [Inglis 1981](#)).

Sereno PC. *et al.* The Giant Crocodyliform *Sarcosuchus* from the Cretaceous of Africa. *Science*. 294: 1516-1519. 2001.

A fossil of a huge crocodile was discovered in the Sahara desert. The crocodile believed to be almost 40 feet long would have been the size of a large city bus and weighed approximately 17,500 pounds. Age calculations based on the size indicate its age at between 50-60 years old. The large size of some of the fossils indicates that atmospheric and climatic conditions have changed. These large bodied reptiles and other mammalian fossils strongly indicate that the earth in the past had more oxygen content and greater atmospheric pressure.

Abstract—"New fossils of the giant African crocodyliform *Sarcosuchus imperator* clarify its skeletal anatomy, growth patterns, size, longevity and phylogenic position...*S. imperator* is estimated to have grown to a maximum body length of at least 11 to 12 meters and body weight of about 8 metric tons over a life-span of 50-60 years."

Tarbuck EJ. Lutgens FK. *Earth an Introduction to Physical Geology*. Prentice Hall. Upper Saddle River, NJ. 1996.

"Recent calculations indicate that the magnetic field has weakened by about 5 percent over the past century. If this trend continues for another 1500 years, Earth's magnetic field will become very weak or even nonexistent. It has been suggested that the decline in magnetic intensity is related to changes in the convective flow in the core (p. 416)."

The amount of cosmic rays that reach the surface of the earth is proportional to the intensity of the magnetic field. Greater magnetic field strength would shield the earth's surface from cosmic rays. Cosmic rays affect radiometric dating, human mutational rates, and longevity.

Tarduno JA. Cottrell RD. High geomagnetic intensity during the Med-Cretaceous from Thellier analyses of single plagioclase crystals. *Science*. 291:1779-1783. 2001.

"These data suggest a time-averaged paleomagnetic dipole moment of $12.5 \pm 1.4 \times 10^{22}$ amperes per square meter, three times greater than mean Cenozoic and Early Cretaceous-Late Jurassic dipole moments when geomagnetic reversals were frequent."

Time Magazine. Putting on Ancient Airs. November 9, 1987.

Discusses the scientific finding that the ancient world had more oxygen at greater air pressures.

Vardiman L. The sky is falling. Vital Articles on Science/Creation. Institute for Creation Research. February 1984.

Discusses increased atmospheric pressure during the age of the dinosaurs. Uses the example of the pterosaur and the pteranodon, which were both large flying reptiles. In order for them to have been able to fly the air pressure would have to increase to twice the present levels. Discusses the many examples of gigantism in the former world, including large dragonflies with 25" wingspans.

Fossil Men—General Philosophy

Berger L. The dawn of humans: redrawing our family tree. *National Geographic*. 90-93. August 1998.

"Named *Australopithecus africanus* he is hundred of millennia closer to man than the East African hominid best known from the skeleton called Lucy. But new research indicates that *africanus* may have had a more apelike body than Lucy. And this reopens the question of who belongs where on the human family tree (p. 91)... For Lucy to evolve into these forms, evolution would have to go backwards—which rarely happens (p. 99)."

Brown F. Harris J. Leakey R. Walker A. Early homo erectus skeleton from west Lake Turkana, Kenya. *Nature*. 316:788. 1985.

This article shows that *Homo erectus* existed as species more than 1.6 mya.

Collard M. Wood B. How reliable are human phylogenetic hypotheses? *Proceedings of the National Academy of Sciences*. 97:5003-6. 2000.

Phylogenetic relationships based on fossil teeth and skulls are not reliable. This article shows how the fossil craniodental components usually do not reveal the proper ancestral relationship.

"Without a reliable phylogeny, little confidence can be placed in hypotheses of ancestry... The results of the parsimony and bootstrap tests indicate that cladistic analyses based on standard craniodental characters cannot be relied on to reconstruct the phylogenetic relationships of the hominoids.

papionins, and, by extension, the fossil hominins. More problematically, the tests suggest that such analyses can strongly support phylogenetic hypotheses that are misleading. For example, the bootstrap-based tests indicate that craniodental data can return impressive levels of statistical support (e.g., 97%) for patterns of phylogenetic relationship that are most likely incorrect. In other words, cladistic analyses of higher primate craniodental morphology may yield not only “false-positive” results, but false-positive results that pass, by a substantial margin, the statistical test favored by many researchers."

Cuozzo, Jack. *Buried Alive: the Startling Truth about Neanderthal Man*. Master Books. Green Forest, AZ. 1999.

Research on Neanderthal man from a creationist perspective. Dr. Cuzzo researched neanderthal remains in various museums. Provides a unique and literal interpretation of the first few chapters of the book of Genesis.

Day, Michael. *Guide to Fossil Man* 4th ed. University of Chicago Press. Chicago, IL. 1993.

Standard reference work on hominid remains. Include descriptions of most of the key fossils used in the support of evolution. The sections on Neanderthal man show he was extremely powerful, and bigger brained than modern man.

Day MH. Leakey MD. Magori C. A new hominid fossil skull (L.H. 18) from the Ngaloba Beds, Laetoli, northern Tanzania. *Nature*. 284:55. 1980.

Modern looking skull that has been dated to 120 Kya \pm 30 Ky. The authors state that, "The dating of the skull also adds considerably to its importance as it places the fossil near to the root of the evolution of *H. sapiens* in East Africa out of the early *H. erectus* stock..." (p. 56). Bear in mind that other journal articles show that *H. erectus* existed up until a few thousand years ago in Australia (Cossack skull—[Freedman 1979](#), [Swisher 1996](#) in the *Homo erectus* section).

Fleagle JG. McGraw WS. Skeletal and dental morphology supports diphyletic origin of baboons and mandrills. *Proceeding of the National Academy of Science*. 96:1157-61. 1999.

Baboons and mandrills are very hard to classify. Some experts say they are evolutionary ancestors. Others say they are not related. There is molecular evidence and morphological evidence to support both positions. Both of these types of apes have been carefully studied. Complete skeletons can be evaluated. Even with all this information ancestral relationships cannot be delineated. This does not bode well for scientists that make up large-scale hominin relationships based on a few pieces of fossil material.

"How these morphological features are best characterized and analyzed in conjunction with the molecular data are difficult issues with no easy answers...However, careful examination of the postcranial skeleton and dentition of these monkeys reveals a suite of morphological features that support the molecular phylogeny and identify *Cercocebus* and *Mandrillus* as a cryptic clade of African monkeys with unique adaptations to terrestrial foraging. In the absence of a good molecular phylogeny for this group of primates, it is quite likely that the skeletal and dental adaptations of this clade of poorly known and difficult-to-study primates would have gone unrecognized."

Freedman L. Lofgren M. The Cossack skull and a dihybrid origin of the Australian aborigines. *Nature*. 282:299. 1979.

This article describes a *Homo erectus* individual that has been dated as recent as 6.5 Kya.

Herbert W. Lucy's uncommon forebearer. *Science News*. 123:88-92. February 1983.

An anatomical comparison of the pygmy chimpanzee (*Pan paniscus*) and *Australopithecus* reveals that they are similar in size, crania and leg bones, they are described in the article as "...natural bipeds." This shows that Lucy (*Australopithecus afarensis*) is simply an extinct primate and not an evolutionary forerunner of man.

Johanson, Donald & Maitland Edey. *Lucy the Beginning of Humankind*. Simon and Schuster. New York, NY. 1981.

Firsthand account by the discoverers of Lucy.

Leakey MG. Spoor F. Brown FH. Gathogo P. Kiarie C. Leakey LN. McDougall. New hominin genus from eastern Africa shows diverse middle Pliocene lineages. *Nature*. 410:433-440. 2001.

Reports the discovery of a new fossil hominid—KNM-WT 40000. A new genus and species were created for this fossil, *Kenyanthropus platyops*. This supposed human ancestor predated the *Australopithecus* lineage and is being heralded as a new branch in the human family tree. It may dethrone the *Australopithecus* lineage, which includes the now famous Lucy fossil as the forerunner of humans. "As a species contemporary with *A. afarensis* that is more primitive in some of its morphology, *K. platyops* weakens the case for *A. afarensis* being the sister taxon of all later hominins..." (p.439).

This article shows that the genus lineage assigned to early man fossils is simply a subjective issue and is based on very flimsy evidence ([Lieberman 2001](#)). "The generic (genus) attribution of KNM-WT 40000 is a more complex issue, in the absence of consensus over the definition of the genus category." (p.438) Not all scientists agree on what constitutes a new genus—in other words, educated guessing is sometimes used to assign the different fossils to their respective placement in the supposed human evolutionary family tree.

Lieberman DE. Another face in our family tree. *Nature*. 410:419-20, 2001.

"The evolutionary history of humans is complex and unresolved. It now looks set to be thrown into further confusion by the discovery of another species and genus, dated to 3.5 million years ago (subheading)...But lately, confusion has been sown in the human evolutionary tree. The discovery of three new australopithecine species—*A. anamensis*, *A. garhi* and *A. bahrelghazali*, in Kenya, Ethiopia and Chad, respectively—showed that genus to be more diverse and widespread than had been thought."

This article shows that the history of early man is merely educated guessing ([Leakey 2001](#)).

Lubenow, Marvin. *Bones of Contention*. Baker Books. Grand Rapids, MI. 1992.

A creationist assessment of Human Fossil. Covers all the major categories of fossil men. Has a good section on radiometric dating in the appendix.

Mellars P. The fate of the Neanderthals. *Nature*. 395:539-40. 1998.

This article reveals two very important points. First it has a chart showing how *Homo sapiens* and Neanderthals have coexisted in Northern Spain and France. Neanderthal fossils have been excavated which span 30 Kyr—47 Kyr ago. Archaic humans have been unearthed at four different Spanish sites and have dates ranging from 36 Kyr—43 Kyr ago. This shows that at these European sites Neanderthals have existed for a greater time span than *Homo sapiens*. Also, another point discussed, is the Neanderthals are being put out of the human family tree because accepting them into our lineage would jeopardize the validity of evolution.

"The Neanderthals have had a chequered scientific career. Berated throughout the first half of the century as distinctly retarded, they were suddenly elevated in the 1960s to having been only marginally less accomplished in biological and behavioural terms than modern *Homo sapiens*. But in the late 1980s they were again relegated to an extinct side-line of human evolution...The eagerness of some scientists to claim close kinship with the Neanderthals could come close to denying that human evolution actually took place."

Oxnard CE. The place of the australopithecines in human evolution: grounds for doubt? *Nature*. 258:289-95, 1975.

"Although most studies emphasize the similarity of the australopithecines to modern man, and suggest, therefore, that these creatures were bipedal tool-makers at least one form of which (*Australopithecus africanus*—"Homo habilis", "*Homo africanus*") was almost directly ancestral to man, a series of multivariate statistical studies of various postcranial fragments suggests other conclusions. Their locomotion may not have been like that of modern man, and may, though including a form or forms of bipedality, have been different enough to allow marked abilities for climbing...The genus *Homo* may be so ancient as to parallel entirely the genus *Australopithecus* thus denying the latter a direct place in the human lineage."

The article says the following when discussing australopithecines hand and foot bones: "A series of associated foot bones from Olduvai and Kromdraai have been assessed as indicative of established bipedal walking even though they differ from man more than the African apes do. A series of associated foot bones from Olduvai has been reconstructed into a form closely resembling the human foot today although a similarly incomplete foot of a chimpanzee may also be reconstructed in such a manner. Hand bones, also from Olduvai, possess a total of seven features in which they resemble various apes compared with only three in which they resemble man, but have nonetheless been evaluated as capable of toolmaking in a human fashion." This all shows that the interpretation of fossils is subject to the viewpoint of the one doing the interpreting.

Stringer CB. Grun R. Time for the last neanderthals. *Nature*. 351:701. 1991.

Shows that Neanderthal man existed as recently as 36 Kya. Contains a chart showing that *H. sapiens* and Neanderthal man were both contemporaries.

Stringer CB. Grun R. Schwarcz HP. Golberg P. ESR dates for the hominid burial site of Es Skhul in Israel. *Nature* 338:757. 1989.

Modern *H. sapiens* and Neanderthal existed together at the same time in the Middle Eastern region about 100 Kya. There was not a gradual blending of *H. neanderthalensis* into modern *H. sapiens*.

Svitol KA. No, after you, Afarensis. *Discover*. 81, January 1999.

Traditional evolutionary theory states that *Australopithecus afarensis* (Lucy) came first and then came *Australopithecus africanus*. But new research shows that *africanus* may actually be more apelike. This shows that the evolutionary trees and branches is merely educated guessing?

Tattersal, Ian. *The Last Neanderthal*. Westview Press. Boulder, CO. 1999.

Supports the theory that Neanderthal man was an extinct and separate species. Many great color pictures. On page 116 there is a section that shows that Neanderthal man and *H. sapiens* were contemporaries for 60 Ky in the Middle East.

Throne, AG. Macumber PG. Discoveries of late Pleistocene man at Kow Swamp, Australia. *Nature*. 238:316. 1972.

Discovery of *Homo erectus* individuals dated to as recent as 10 Kya.

Vallada H. Reyss JL. Joron JL. Valladas G. BarpYosef O. Vandermeersch B. Thermoluminescence dating of Mousterian "Proto-Cro-Magnon" remains from Israel and the origin of modern man. *Nature*. 331:614. 1988.

Modern man and Neanderthal man have co-existed in the Middle East for at least 60 Ky. According to this article, modern man's lineage stretches back for at least 100 Ky. Also these remains were unearthed from a cave. Burial in caves was a common practice in the Middle East during the time of the patriarchs (Gen. 23:19, 25:9, 50:13, Jos. 10:16).

Woodward AS. A new cave man from Rhodesia, South Africa. *Nature*. 108:371. 1921.

First description of Rhodesian man. Describes the skull as not mineralized. First dated at 40 thousand years later re-dated to 200-400 thousand years old. Discovered at the end of a mine shaft/cave.

Australopithecus/Extinct Apes/Lucy/Pygmy Chimpanzees

Alemseged Z.*et al.* A juvenile early hominin skeleton from Dikika, Ethiopia. *Nature*. 443:296-301. 2006.

This fossil discovered in 2000 and nicknamed peace—Selam, has been touted as an ancestor to man at 3.3 million years before the present. A flood buried the intact corpse of the creature and scientists have placed it in the *Australopithecus* line, it is also called Lucy's child because it is an immature version of the famous Lucy. It is remarkably complete with all the major bones intact with the exception of the pelvis and some of the limb bones. Although supposedly a human ancestor the article reveals that it has feature characteristic of apes. Including; scapula, finger bonesl, and hyoid bone. Thus although remarkable it is simply an extinct ape.

"Now that the scapula of this species can be examined in full for the first time, it is unexpected to find the strongest similarities with Gorilla, an animal in which weight bearing and terrestrial knuckle-walking predominately characterize locomotor use of the forelimbs. Problematic in the interpretation of these findings is that the diversity of scapula architecture among hominoid species is poorly understood from a functional perspective."

"The current position of the hyoid bone beneath the palate precludes a comprehensive analysis of its morphology (Fig. 3b), but some diagnostic features can be observed and measured. It is most similar to that of juvenile African apes, and unlike that of modern humans."

"The shape of the scapula resembles the scapulae of juvenile and adult gorillas. In contrast, modern humans at a similar age have a wider infraspinous fossa and a more laterally facing glenoid fossa, with a correspondingly horizontal spine orientation...and the manual phalanges are curved and long, as noted previously for *A. afarensis* "

Anonymous. Ethiopia yields oldest human fossils. *Science News*. vol. 106 (November 2, 1974), p. 276.

"When—and where—was the beginning, the cradle of early man upon the earth? A succession of increasingly ancient discoveries has led some anthropologists to the point of virtually suspending their judgment, as more and more primitive examples of genus *Homo* push further back the curtain of time. The latest addition to the growing line, announced last week in Ethiopia, shows the grounds for such conservatism, as it promises to extend human lineage as far back as four million years."

"The finds—a complete upper jaw, half of another upper jaw, all with teeth—were found on Oct. 17 and 18 by Alemeyu Asfew of the Ethiopian Antiquities Commission, a member of the four-nation Afar Research Expedition. Working with D. Carl Johanson of Case Western Reserve University in Cleveland and Maurice Taieb of the French National Center for Scientific Research, he spotted the bones lying on the surface at a volcanic deposit on the Hadar, a tributary of the Awash River between the towns of Dessie and Assab in north-central Ethiopia."

"The bones were in a stratigraphic level some 150 feet beneath, and thus probably much older than, a volcanic layer which has been dated (by the potassium-argon method, at from 3.01 to 3.25 million years old."

"The small size of the teeth in the jawbones, hypothesizes Johanson, may well mean that genus *Homo* was 'walking, eating meat and probably using tools, perhaps bones, to kill animals' as much as four million years ago. There is even the possibility, Johanson says, that he had 'some kind of social cooperation and some sort of communication system."

"If *Australopithecus* lived in the same region occupied a million years before by the more highly evolved genus *Homo*, suggest Johanson and his Afar colleagues, it seems likely that the 'true man' and the 'near man' lived in the area at the same time.... 'All previous theories of the origin of the lineage which lead to modern man must now be totally revised. We must throw out many existing theories and consider the possibility that man's origins go back to well over four million years."

Anonymous. *Australopithecus*, a long-armed, short-legged, knuckle-walker. *Science News*. 100:357. (November 27, 1971).

"*Australopithecus* limb bone fossils have been rare finds, but Leakey now has a large sample. They portray *Australopithecus* as long-armed and short-legged. He was probably a knuckle-walker, not an erect walker, as many archaeologists presently believe."

Berg C. How did the Australopithecines walk? a biomechanical study of the hip and thigh of *Australopithecus Afarensis*. *Journal of Human Evolution*.26:259-73. (April 1994).

"The present results lead to the conclusion that the bipedalism of the *Australopithecus* must have differed from that of *Homo*. Not only did *Australopithecus* have less ability to maintain hip and knee extension during the walk, but also probably moved the pelvis and lower limb differently. It seems that the australopithecine walk differed significantly from that of humans, involving a sort of waddling gait, with large rotary movements of the pelvis and shoulders around

the vertebral column. Such a walk, likely required a greater energetic cost than does human bipedalism. The stride length and frequency of australopithecines, and consequently their speed, should have differed from that of *Homo* in contrast to some recent hypotheses of dynamic similarity among hominids. A previous paper has suggested that the pelvic proportions of *Australopithecus* could provide some arguments for an arboreal locomotion. The results of the present study suggest amplification of this opinion."

Berger LR. Lacruz R. deRuiter DJ. Brief communication: Revised age estimates of Australopithecus-bearing deposits at Sterkfontein, South Africa. *American Journal of Physical Anthropology*. 119:192-197. 2002.

"Little foot' also known as Sterkfontein hominin Member 2, an *Australopithecus africanus* fossil which has a distinctive "ape" big toe was found in the Sterkfontein cave in South Africa (see [Fischman 1996](#) in the Bipedality section). It was originally thought to have an age of 3-3.5 Mya. This article gives evidence for giving it a more recent minimum age of 1.07 My. The mean minimum is estimated at 1.5 My. This has implications for the Australopithecus lineage. If we have an Australopithecus with a toe structure similar to the apes how is it possible that the Laetoli footprints that date to 3.8 Mya were made by Australopithecines that had human shaped feet and toes.

Abstract—"Specifically, the hominin fossil commonly referred to as the "Little Foot" skeleton from Member 2, which is arguably the most complete early hominin skeleton yet discovered, has been magnetostratigraphically dated to 3.30–3.33 Ma... We estimate that Member 2, including the Little Foot skeleton, is younger than 3.0 Ma... Our results suggest that *Australopithecus africanus* should not be considered as a temporal contemporary of *Australopithecus afarensis*, *Australopithecus bahrelghazali*, and *Kenyanthropus platyops*."

"An age estimate for the Sterkfontein Member 2 assemblage was recently set via magnetostratigraphy at a near-absolute date of 3.30–3.33 Ma, with an outside range of 3.22–3.58 Ma."

"Based on our analysis, we support his caution in an acceptance of a date in excess of 3.0 Ma for this Member (member 2—Little foot). Given our age estimates for Sterkfontein Member 4, the suggested minimum bracketing age of 2.7 Ma (Partridge et al., 2000a) for the Sterkfontein Member 2 hominin should be set at ca. 1.5 Ma."

"We suggest that the Member 2 "Little Foot" skeleton is not older than 3.04 Ma, and may be as young as 1.07–1.95 Ma. If, as we propose, *Australopithecus africanus* from Sterkfontein dates to between 1.5 Ma–ca. 2.5 Ma, then the paleontological range of *A. africanus* probably does not overlap the temporal ranges of early East African hominins such as *Australopithecus afarensis*, *A. bahrelghazali*, and *Kenyanthropus platyops*. Rather, it is broadly contemporaneous with more derived species such as *Australopithecus garhi*, *A. aethiopicus*, *A. boisei*, and early members of the genus *Homo*."

Brunet M. *et al.* A new hominid from the Upper Miocene of Chad, Central Africa. *Nature*. 418:145-151. 2002.

Reports on the discovery of a new hominid *Sahelanthropus tchadensis* (dubbed Toumai which means hope of life, a name given babies born just before the dry season) dated between 6-7 million years old. Isotope dating is not available so it was dated according to the faunal fossil associated with it. Some anthropologists contend the skull is that of an ancient female gorilla ([Canellas 2002](#)).

Canellas C. Man or gorilla? experts at odds over ancient skull. Reuters News. www.reuters.com. July, 12, 2002.

Brigitte Senut of the National History Museum in Paris and two other French experts have cast doubts on the discovery of *Sahelanthropus tchadensis* recently unearthed in Chad. Senut said the small canine teeth and the short face merely point to a female gorilla.

Cartmill M. Four legs good, two legs bad. Natural History. 92:65-67. (November 1983).

"Evolutionary theorizing was shrugged off by most biologists until 1859, when Darwin and Wallace came forth with the pleasingly mechanical theory of natural selection.

"... As the steel magnate Andrew Carnegie put it after reading Darwin and Spencer: 'Not only had I got rid of theology and the supernatural, but I had found the truth of evolution. 'All is well since all grows better,' became my motto, my true source of comfort.'"

"Dart's 'tools' from the australopithecine cave sites had always met with coughs and raised eyebrows from his peers. But they were not ruled out of the picture until the early 1970's, when E. S. Vrba and C. K. Brain undertook more extensive studies of the animal bones from those caves. They concluded that the australopithecines, like the baboons and antelopes from the same deposits, had been dragged into the caves and eaten by leopards and carnivores. Most and probably all of the bone tools were scraps from a cat's lunch—and so were the remains of the supposed killer apes."

"When people turn indignantly from one sort of speculation to embrace another, there are usually good, non-scientific reasons for it."

"A myth, says my dictionary, is a real or fictional story that embodies the cultural ideals of a people or expresses deep, commonly felt emotions. By this definition, myths are generally good things—and the origin stories that paleoanthropologists tell are necessarily myths."

Cartmill M. Pilbeam DR Isaac G. One hundred years of paleoanthropology. American Scientist. 74:410-20. (July/August 1986).

"It is now known that these so-called robust australopithecines coexisted with *Homo* for over a million years. The marked anatomical differences between the two imply that they were different species with quite different adaptations. Thus, the notion of one general adaptive niche for hominids must be a mistake. Whatever explains *hominid* origins cannot also be a sufficient explanation of *human* origins, for not all hominids became human."

"However, at present there is not thought to be any good evidence for either meat-eating or tool-using by any australopithecines, and the anatomy of their jaws and teeth implies a largely or wholly vegetarian diet."

"Nancy Tanner and Adrienne Zihlman posit a female collective as the social and economic core of early hominid life, and see hominid females as the source of technological invention (of tools for collecting and carrying food to share with offspring) and of evolutionary progress (by means of a female preference for the most feminine, sociable males as mates). By contrast, C. Owen Lovejoy and his associates see australopithecine *males* as monogamous breadwinners provisioning their more sedentary mates and offspring."

"A social pattern like that of lions, with females working communally to support a few big, lazy, territory-patrolling males, would fit what we know about *Australopithecus*, though it might not enhance the amour-propre of either male or female scientists."

"The early australopithecines are known from fossilized footprints to have been bipedal; but they were surprisingly apelike in skull form, premolar dentition, limb proportions, & morphology of some joint surfaces, and they may still have been spending a significant amount of time in the trees."

Gould SJ. A short way to big ends. *Natural History*. 95:18-28 (January 1986).

"Oxnard is our leading expert on the quantitative study of skeletons. He has used the techniques of multivariate analysis—a set of statistical tools, forming the basis of my own technical work as well, that can integrate large suites of measurements and extract general estimates of similarity and difference from all measures considered together. Oxnard has spent years studying the australopithecines, the group of African hominids considered by all experts to be our closest genealogical cousins (probably our ancestors as well). Oxnard has argued in several books and articles that australopithecines are anatomically more different from us than other experts imagine. He views them as bipedal like us, but also capable of motion with all fours (probably for climbing) in a manner 'far more sophisticated than that of which any human is capable.' In short, he sees australopithecines as uniquely different from apes and humans, not as imperfect people on the way up."

Herbert W. Was Lucy a climber? dissenting views of ancient bones. *Science News*. 122:116. (August 21, 1982).

"Anthropologist Randall L. Susman and anatomist Jack Stern of the State University of New York at Stony Brook say that Lucy's bones and other fossils from the Hadar region at Ethiopia indicate that the earliest known species of hominid (called *Australopithecus afarensis*), while adapted to walking, was still spending considerable time in the trees. University of Chicago anthropologist Russell Tuttle ... also argues, based on an analysis of the Laetoli footprints in Tanzania, that another more human species of ape-man coexisted with *A. afarensis* about 3.7 million years ago; this unnamed species, rather than *A. afarensis*, was probably the direct ancestor to *Homo sapiens*, Tuttle says."

"In addition, Susman says, Lucy's limb proportions indicate that she had not yet developed an efficient upright gait."

"Tuttle agrees that, based on anatomical data, *A. afarensis* must have been arboreal, but he goes even further, arguing that Lucy's pelvis shows a flare that is better suited for climbing than for walking. More importantly, he says, the Laetoli footprints do not match the foot bones found in Hadar; where the Hadar foot is ape-like, with curved toes, the footprints left in Laetoli are 'virtually human.' Tuttle concludes that the bipedal species which lived in Tanzania is a different species from *A. afarensis*—and one more closely related to humans."

Herbert W. Lucy's uncommon forebear. *Science News*. 123:88-92. (February 5, 1983).

"In 1928, Harvard University zoologist Harold J. Coolidge ... stumbled upon ... the first evidence of a previously unknown species of living ape, a pygmy chimpanzee...."

"For some, the newly discovered pygmy chimpanzee, graceful and human-like, provided the perfect answer: *Pan paniscus*, Coolidge declared in 1933, offered the best model for understanding the missing common ancestor."

"Along with [Vincent] Sarich, Zihlman (of UC Santa Cruz) and [Douglas] Cramer (of New York University) have become the champions of the bonobo model, and they have based their claims primarily on studies of the anatomy of living apes and fossilized hominids."

"To make her point, [Adrienne] Zihlman compares the pygmy chimpanzee to 'Lucy,' one of the oldest fossil hominids known, and finds the similarities striking. They are almost identical in body size, in stature and in brain size, she notes, and the major differences (the hip and the foot) represent the younger Lucy's adaptation to bipedal walking (Lucy, officially called *Australopithecus afarensis*, has been dated at 3.6 million years, although that date has recently been challenged)."

"Susman also discovered that pygmy chimps have a unique style of locomotion. Like modern gorillas they tend to be knuckle-walkers on the ground, yet they seem to be natural bipeds, too, frequently walking upright both on the ground and in the trees."

Oxnard CE. The place of the Australopithecines in human evolution: grounds for doubt. *Nature*. 258:389-95. (December 1975).

"Although most studies emphasize the similarity of the australopithecines to modern man, and suggest, therefore, that these creatures were bipedal tool-makers at least one form of which (*Australopithecus africanus*—'Homo habilis,' 'Homo africanus') was almost directly ancestral to man, a series of multivariate statistical studies of various postcranial fragments suggests other conclusions."

Oxnard CE. *University of Chicago Magazine* (Winter, 1974), pp. 8-12.

"Multivariate studies of several anatomical regions, shoulder, pelvis, ankle, foot, elbow, and hand are now available for the australopithecines. These suggest that the common view, that these fossils are similar to modern man or that on those occasions when they depart from a similarity to man they resemble the African great apes, may be incorrect. Most of the fossil fragments are in fact uniquely different from both man and man's nearest living genetic relatives, the chimpanzee and gorilla.... To the extent that resemblances exist with living forms, they tend to be with the orangutan."

Oxnard CE. Human fossils: new views of old bones. *American Biology Teacher*. 41:264-276. (May 5, 1979).

"This is a time-honored method that can be extraordinarily powerful (for the eye and the mind are excellent computers of a kind). But we have merely to remember cases like Piltdown Man, which turned out to be a fraudulent composite of a genuine fossil skull cap and a modern ape jaw, or *Hesperopithecus*, the ape of the West, which eventually was discovered to be a peccary, or even of the completely different portraits that have been drawn for the facial features of a creature such as *Zinjanthropus* to realize that this method also has many difficulties."

"Let us now return to our original problem: the australopithecine fossils.... The new investigations suggest that the fossil fragments are usually uniquely different from any living form; when they do have similarities with living species, they are as often as not reminiscent of the orangutan."

"It is far more likely that the genus *Homo* is much older than currently believed and that the australopithecines of Olduvai and Sterkfontein represent only parallel evolutionary remnants.... It is really now somewhat unlikely that australopithecines ... hailed as human ancestors can actually have had very much to do with the direct human pathway."

Oxnard, Charles E., *The Order of Man* Yale University Press. New Haven. 1984. pp. 366 pp. *iii-iv*

"[in *Nota bene* section in back] Though the standard idea is that some of the australopithecines are implicated in a lineage of humanlike forms, the new possibility suggested in this book, a radiation separate from either humans or African apes, has received powerful corroboration. It is now being recognized widely that the australopithecines are not structurally closely similar to humans, that they must have been living at least in part in arboreal environments, and that many of the later specimens were contemporaneous or almost so with the earliest members of the genus *Homo*."

Pilbeam DR. Gould SJ. Size and scaling in human evolution. *Science*. 186:892-901. (December 6, 1974).

"Human paleontology shares a peculiar trait with such disparate subjects as theology and extraterrestrial biology: it contains more practitioners than objects for study."

"Both the australopithecine and the chimpanzee-gorilla sequence display this set of allometric consequences: larger forms are scaled-up replicas of their smaller prototypes. *Homo sapiens* provides the outstanding exception to this trend among primates, for we have evolved a relatively large brain and small face, in opposition to functional expectations at our size. We retain, as large adults, the cranial proportions that characterize juvenile or even fetal stages of other large primates; partial neoteny has probably played a major role in human evolution. *Australopithecus africanus* has a rounded braincase because it is a relatively small animal; *H. sapiens* displays this feature because we have evolved a large brain and circumvented the expectations of negative allometry. The resemblance is fortuitous; it offers no evidence of genetic similarity."

Rak Y. Ear ossicle of *Australopithecus robustus*. *Nature*. 279:62-63. (May 3, 1979).

"We report here the discovery of the first ear ossicle, an incus, of a Plio-Pleistocene hominid. It is substantially different from that of a modern man, and the dissimilarity exceeds that between the ear bones of *Homo sapiens* and of the African apes. The new incus is of interest particularly in view of the unique advantages the ear ossicles have for taxonomic and phylogenetic studies. The only other fossil hominid ear ossicles are from Qafseh and are indistinguishable from those of modern man."

"Although the incus is tiny, its importance should not be overlooked. Furthermore, this is one of the most complete and undistorted bones of *Australopithecus robustus* yet discovered."

"The solid appearance of the SK 848 incus and of its articular surface suggests that its shape is not the result of some pathological process. Its unusual morphology is far beyond the range of normal variation characteristic of the incus of modern man and the great apes."

Richmond BG. Evidence that humans evolved from a knuckle-walking ancestor. *Nature*. 404:382-85. (March 2000).

"Here we present evidence that fossil attributed to *Australopithecus anamensis* (KNM-ER 20419) and *A. afarensis* (AL 288-1) retain specialized wrist morphology associate with knuckle-walking.

"Although there is some debate about the extent to which hominids such as *A. afarensis* continued to practise arboreality, the retention of arboreal morphology in early hominids suggest that at least their ancestors engaged in arboreal behaviour. Thus, the wealth of evidence illustrating the biomechanical similarities between climbing and bipedalism might still help to explain the morphologic transition of an ape-like ancestor to an early biped. However, the present

study does not support hypotheses in which the ancestor was completely committed to orthograde arboreality."

Tuttle RH. The pitted pattern of Laetoli feet. *Natural History*. 99:61-65. (March 1990).

"The first bipedal trail, consisting of five footprints in sequence, was discovered in 1977 at Laetoli site A. In a preliminary report, Mary Leakey noted that these prints, although short and very broad, appeared to be hominid."

"The contrast between these prints and the more distinctly human-shaped footprints from Laetoli site G, which were uncovered in 1978 and 1979, prompted me to question the initial interpretation. The two sites are only a mile apart and are virtually contemporaneous."

"In brief, a small bear walking bipedally (a cub looking for mama bear?) could have produced the Laetoli A trail."

"In preliminary reports by several paleoanthropologists, the trail at site G were portrayed as remarkably human. Yet they were presumed to have been created by *Australopithecus afarensis*, the same species as the 3-million-year-old skeletons of Lucy and other individuals discovered considerably to the north at Hadar, Ethiopia. My problem in accepting this was that the Hadar beasts had apelike features (notably, down-curved toes) that I just didn't detect in the G prints."

"The humanness of the plantar (sole) anatomy exhibited by the G prints is underscored by observing the feet and footprints of habitually barefoot people.... The footprints of both the Machiguenga and the Laetoli G bipeds exhibit strong heel, ball, and first toe impressions and a well-developed medial longitudinal arch, which is the hallmark of human feet."

"In sum, the 3.5-million-year-old footprint trails at Laetoli site G resemble those of habitually unshod modern humans. None of their features suggest that the Laetoli hominids were less capable bipeds than we are. If the G footprints were not known to be so old, we would readily conclude that they were made by a member of our genus, *Homo*.... In any case, we should shelve the loose assumption that the Laetoli footprints were made by Lucy's kind, *Australopithecus afarensis*. The Laetoli footprints hint that at least one other hominid roamed Africa at about the same time."

Zihlman AL. Pygmy chimps, people and the pundits. *New Scientist*. 104:39-40. (November 15, 1984).

"It has been said that the reception of any successful new scientific hypothesis goes through three predictable phases before being accepted. First, it is criticized for being untrue. Secondly, after supporting evidence accumulates, it is stated that it may be true, but it is not particularly relevant. Thirdly, after it has clearly influenced the field, it is admitted to be true and relevant, but the same critics assert that the idea was not original."

"Except for having small rather than large teeth, and a quadrupedal rather than a bipedal pelvis, pygmy chimpanzees are remarkably like early gracile australopithecines in their skeletal dimensions."

Homo erectus

Anonymous. Last Adam. *Scientific American*. 227:48. October 1972.

"Skulls that were buried a scant 10,000 years ago now suggest that at a time when elsewhere in the Old World the successor species *Homo sapiens* was turning from hunting and gathering to agriculture, some *Homo erectus* genes lingered on in Australia."

Anonymous. Evolution revolution. Science News. 109:164. (March 13, 1976).

"*Homo erectus* has generally been dated about 500,000 to 700,000 years old. Now this species will have to be dated at more than twice that age. Richard E. Leakey announced this week the discovery of a complete *Homo erectus* skull that has been reliably dated at 1.5 to 1.8 million years."

"This is a very, very exciting development for us,' says Leakey, 'particularly because it is uncontroversially *Homo* and it is from deposits that have also yielded uncontroversial evidence of *Australopithecus*."

"Another piece of evidence suggesting that a true *Homo* existed almost 3 million years ago was also found.... It is an almost complete right pelvic bone that shows modern characteristics and comes from deposits that are older than 2 million years."

"From a collection of more than 30 hand bones, for instance, a composite hand has been formed, 'Our preliminary observations,' says Johanson, 'suggest to us that there is nothing in the anatomy or morphology of the bones which would preclude the kinds of movements that we are capable of with our own hands today.'"

Asfaw B. Gilbert HW. *et al.* Remains of *Homo erectus* from Bouri, Middle Awash, Ethiopia. Nature. 416:317-320. 2002.

This article shows that the divisions of the different *Homo erectus* fossils are completely unwarranted. These divisions are based often on meager data, which is rejected by this author.

"Endocranial capacity is 995 cm (measured repeatedly with teff seed)... As a consequence, the cladistic method, regardless of serious questions concerning its applicability here, fails to support the division of *H. erectus* into Asian and African clades. Whether viewed metrically or morphologically, the Daka cranium confirms previous suggestions that geographic subdivision of early *H. erectus* into separate species lineages is biologically misleading, artificially inflating early Pleistocene species diversity. Rather, the Daka calvaria is consistent with the hypothesis of a widespread, moderately polymorphic and polytypic species at ~1.0 Myr."

"To recognize the basal fossils representing this apparently evolving lineage with the separate species name '*H. ergaster*' is therefore doubtfully necessary or useful. At most the basal members of the *H. erectus* lineage should be recognized taxonomically as a chrono-subspecies (*H. erectus ergaster*). Suggestions that *H. ergaster* itself contains multiple species, even in a single locality, seem completely unsupported by the data."

Bower B. *Homo erectus* shows staying power in Java. Science News. 150:173. (December 14, 1996).

"*H. erectus*, now estimated to have inhabited the Indonesian island of Java until sometime between 27,000 and 53,000 years ago, died out as *H. sapiens* more successfully exploited local Stone Age environments, assert Carl C. Swisher III of Berkeley (Calif.) Geochronology Center and his colleagues. Many researchers have argued that a similar scenario played out in Europe and the Middle East, where Neandertals lived at the same time as *H. sapiens* before going extinct around 35,000 years ago.

"It looks like independent [*H*] *erectus* and [*H*] *sapiens* lineages evolved in Southeast Asia,' holds study participant Susan C. Antón, an anthropologist at the University of Florida in Gainesville. 'It wouldn't have taken a huge technological or intellectual advantage for one species to have replaced another over a number of generations.'"

Brain CK. Sillen A. Evidence from the Swarthkrans cave for the earliest use of fire. *Nature*. 336:464-66. 1988.

Evidence from the Swarthkrans caves in Africa testifies to the skill of the *Homo erectus* peoples. In this cave were found the burned and charred remains of ancient meals. Evidence from this site includes not only fire but also stone tools. Many of the bones have butchery marks. This indicates that fire was regularly used to prepare animals that had been butchered with the use of flint tools. The fire makers remain unknown but only two types of hominids are found associated with these artifacts, *Homo erectus* and *Australopithecus robustus*. *Homo erectus* was the maker of the fires since *Australopithecus robustus* bones were found among the charred remains of the meals

"Excavations of Member 3 yielded a total of 59,488 fossil fragments including 270 pieces judged to be burnt. Identifiable burn fragments are mainly derived from antelopes up to the size of wildebeest, however individual burnt specimens of zebra, warthog, baboon and *A. robustus* were also recovered. Of the 270 pieces it was inferred from colour and structural changes that 46 were lightly heated to below 300°C, 52 to 300-400°C, 45 to 400-500°C and 127 to temperatures above this. These temperatures are consistent with those occurring in experimental campfires made from white stinkwood (*Celtis africana*) branches, the most common tree in the vicinity of Swarthkrans...The presence of cut-marked bones in Member 3 indicate that butchery was practiced as well."

Falk D. The petrified brain. *Natural History*. 93:36-39. (September 1984).

"Since the outside portion of the brain, known as the cerebral cortex, is responsible for higher thought processes, I believe that the evidence from endocasts should be given special weight in assessing the evolutionary relationships of hominids."

"In any case, brain size varies considerably in modern humans without appearing to affect intelligence. For example, there is a record of an apparently normal human adult with a cranial capacity of 790 cc."

"I expected the australopithecine natural endocasts to appear like miniature replicas of human brains because that had been the prevalent view in the scientific literature since 1925.

"... My analysis of the seven known australopithecine endocasts shows Radinsky's hunch was right: all of the convolutions that they preserve were apelike."

"An endocast from the Kenya National Museums, a *Homo habilis* specimen known as ER 1470, reproduces a humanlike frontal lobe, including what appears to be Broca's area.... ER 1470's capacity has been estimated at more than 750 cc."

"Apes occasionally ... hunt, make tools, and fight, but they never engage in spoken language as we know it.... If we wish to identify one prime mover of human brain evolution, the endocast from ER 1470 (*Homo habilis*), with its humanlike frontal lobes that contain what appears to be Broca's speech area in the left hemisphere, confirms what is suggested by comparing the behavior of apes and humans: it is language. Human technology and social achievements required conscious thought, which is, and probably was, dependent on language. In other words, until they acquired language, our early ancestors may not have been truly human."

Gibbons A. *Homo erectus* in Java: A 250,000 year anachronism. *Science*. 274 :1841-42. (December 13, 1996).

"The story of human evolution has lately become as complicated as a Tolstoy novel."

"But lately, this tale has become thick with new subplots and characters. The recent recognition of several different species of early *Homo* living in Africa about 2 million years ago, and various forms of *Australopithecus* before that, has made it clear that there were far more lineages in the early history of the human family than previously believed. Now, it seems that later chapters may also have to be rewritten to include at least one more character: a relative who makes a surprise reappearance long after it was presumed dead.

"... an interdisciplinary team of scientists suggests that one relative, *H. erectus*, was still alive in Java, Indonesia, as recently as 27,000 to 53,000 years ago—at least 250,000 years after it was thought to have gone extinct in Asia. If so, this remnant population of *H. erectus*, a species that first appeared in the fossil record about 2 million years ago, would have been alive when modern humans and Neanderthals roamed the earth."

Johanson, Donald, *Lucy the Beginnings of Humankind*. Simon and Shuster. New York. p. 144. 1981.

"Humans the world over can and do interbreed....It would be interesting to know if a modern man and a million-year-old *Homo erectus* woman could together produce a fertile child. The strong hunch is that they could; such evolution as has taken place is probably not of the kind that would prevent a successful mating. But that does not flaw the validity of the species definition given above, because the two cannot mate. They are reproductively isolated by time. Therefore, somewhere along the evolutionary path that leads from one to the other a species line may be drawn if, in the opinion of an anatomist, the differences between them are significant."

"Since the word 'significant' means different things to different people, there will always be disagreement about where—or whether—to draw species lines in extinct lineages."

Kaufman L. Did a third human species live among us? Newsweek p. 52. (December 23, 1996).

"A geologist at the Berkeley Geochronology Center, [Carl] Swisher uses the most advanced techniques to date human fossils. Last spring he was re-evaluating *Homo erectus* skulls found in Java in the 1930s by testing the sediment found with them. A hominid species assumed to be an ancestor of *Homo sapiens*, *erectus* was thought to have vanished some 250,000 years ago. But even though he used two different dating methods, Swisher kept making the same startling find: the bones were 53,000 years old at most and possibly no more than 27,000 years—a stretch of time contemporaneous with modern humans."

"Our species, *Homo sapiens*, is thought to have evolved about 200,000 years ago. It's already known that it walked the Earth at the same time as its heavy-browed cousins, the Neanderthals, who became extinct about 30,000 years ago. Now Swisher's find implies that all three hominid species were contemporaneous. Says Swisher: 'It looks like today is unique in that there is only one single species of humans.'"

Leakey RE. Skull 1470—New clues to earliest man? National Geographic. p.819-29. June 1973.

Shows the unique morphology of skull of KNM-ER 1470, which was originally dated to 2.8 Mya and has been re-dated to 1.8 Mya. This was done because the skull was too modern looking to be dated so old. Page 824-5 contains a very modern looking artistic rendition of its appearance. The picture shows a modern looking woman with an apish nose? Nasal features cannot be interpreted from cranial remains. Once again the interpretation of the artist is important.

Mania D. Mania U. Latest Finds of Skull Remains of *Homo erectus* from Bilzingsleben (Thuringia). *Naturwissenschaften*, 81:123-27. 1994.

Bilzingsleben is a paleolithic site located near Thuringia, Germany. This area has a long history of providing fossil specimens of various animal and even humans. Dietrich Mania of the University of Jena began present day excavations in 1969. He discovered numerous artifacts and human fossils, which have been classified as *Homo erectus*. About 1600 square meters have been excavated and today Bilzingsleben is a very important European paleolithic site. The date assigned to these artifacts is 370,000 years before the present.

This site was a base camp for a group of *Homo erectus*. The outlines of three large tentlike structures have been uncovered. These structures all had hearths near the doorways and the doorways were pointed south away from the prevailing northern winter winds. The building of hearths implies that the use of fire had been mastered. Also numerous bone tools have been uncovered. These tools include hoes, scrapers, awls, and points. A large amount of stone tools were also excavated. These included choppers, scrapers, chisel shaped tools, wedges, knives, points, and core flake tools. Many of the tools had the edges retouched or sharpened. Mattocks were fashioned from the deer antlers. Some tools were used in the manufacture of other tools. Interestingly one elephant bone fragment has a group of 7 and 14 carved parallel lines on its surface. Some people have conjectured that it may have been an early calendar—but this is speculative. Calendar or not, these marks indicate that abstract thinking was taking place.

Excavations at this site reveal that there was a division of labor at the site. Some areas were used for the processing of stone tools, other areas were used for the processing of animals, and still other areas were used for the working of organic matter and wood. One area of the camp consisted of a large paved area. This area had been paved over with bones and rocks. This paved area had a large rock anvil centered between bison horns; indications are that it may have been used for human sacrifices. Human cranial fragments were found nearby.

Morwood MJ. O'Sullivan PB. Aziz F. Raza A. Fission-track ages of stone tools and fossils on the east Indonesian island of Flores. *Nature*. 392:173-176. 1998.

This article indicates that *Homo erectus* was highly intelligent. Intelligent enough to manufacture sea-going vessels and navigate at the minimum a stretch of open water 19km and at other times 75 km wide as indicated by an accompanying map.

Abstract—"Here we report zircon fission-track dates from two fossil sites on the Wallacean island of Flores. Tengi Talo, which has an endemic fauna, dates to 0.90 ± 0.07 Myr BP, whereas Mata Menge, where stone tools are found with elements of continental Southeast Asian fauna, dates to between 0.88 ± 0.07 and 0.80 ± 0.07 Myr BP. Even at times when the sea level was lowest, water crossings were necessary to reach Flores from Southeast Asia. We conclude that *Homo erectus* in this region was capable of repeated water crossings using watercraft."

"Furthermore, they indicate that, sometime between 800,000 and 900,000 years ago, *Homo erectus* in this region had acquired the capacity to make water crossings. Previously, in the region of the Wallacean islands this capacity was thought to be the prerogative of modern humans and to have only appeared in the Late Pleistocene, with the earliest widely accepted evidence for watercraft being the colonization of Australia by modern humans from Wallacea between 40,000 and 60,000 years ago. Outside this region, the technology to undertake even limited water crossings is not clearly evident until much later, at the end of the Pleistocene. Our results challenge this view. Therefore, this evidence, combined with the geographical radiation of *Homo erectus* in the Early Pleistocene and other recent discoveries, suggests that the cognitive capabilities of this species may be due for reappraisal."

O'Sullivan PB. *et al.* Archeological implications of the geology and chronology of the Soa basin, Flores, Indonesia. *Geology*. 29:7:607-10. 2001.

"In order for *Homo erectus* to have successfully colonized Flores requires that this species was capable of sea travel prior to ~0.84 Ma. Because at least two major sea crossings were necessary to migrate across Wallace's line to Flores. The capacity for sea travel was previously thought to be the prerogative of modern humans and to have first appeared only in the late Pleistocene, the earliest widely accepted evidence for water-craft being the colonization of Australia by modern humans from Wallacea between 40,000—60,000 yr ago. Or findings challenge this view...by indicating conclusively that *Homo erectus* had seafaring capabilities more than 700,000 yr before the currently recognized time of Australian colonization."

Rensberger B. Human fossil is unearthed," *Washington Post*, October 19, 1984, pp. A1, A11.

"The most complete skeleton of an early human ancestor ever found has been dug up in Kenya. The bones are those of a surprisingly tall 12-year-old boy of the *Homo erectus* species who died about 1.6 million years ago."

"The new find reveals that these ancient people had bodies virtually indistinguishable from our own.... The skeleton showed that the boy stood 5 feet 6 inches, taller than many of today's 12 year olds."

"From the neck down, the bones are remarkably modern in shape...."

"The skull and jawbone, by contrast, are more primitive in appearance.... The brain size of the new specimen has not been measured, but [Alan] Walker estimated it between 700 and 800 cms."

"'When I put the mandible onto the skull,' Walker recalled, 'Richard [Leakey] and I both laughed because it looked so much like a Neanderthal.'"

"The age of the skeleton at death was estimated on the basis of its teeth. It had the combination of baby teeth and permanent teeth appropriate to a 12-year-old of today. Its antiquity was determined from its location, sandwiched between layers of volcanic ash that can be dated by measuring the products of radioactive decay."

Roche H. *et al.*, Early hominid stone tool production and technical skill 2.43 Myr ago in West Turkana, Kenya. *Nature*. 399:57-60. 1999.

Millions of years ago according to the evolutionary record intelligent humans were making tools, which required coordination and intelligence. The time assigned to these fossils indicates that *Homo erectus* had to be the toolmakers since no other hominid was around at this time, which was too early for modern man and too late for the australopithecines. This technology was widespread as the same technological skill and tools have been found in Ethiopia ([Semaw 1997](#)).

Abstract—"Well-documented Pliocene archaeological sites are exceptional. At present they are known only in East Africa, in the Hadar, and Shungura formations of Ethiopia and in the Nachukui formation of Kenya. Intensive archeological survey and a series of test excavations conducted in the Nachukui formation since 1987 have led to the discovery of more than 25 archaeological sites whose ages range from 2.34 to 0.7 million years before present (Myr) 4,5, and to the extensive excavation of two 2.34-Myr sites, Lokalalei 1 in 1991 and Lokalalei 2C in 1997. Lokalalei 2C yielded nearly 3,000 archaeological finds from a context of such good preservation that it was possible to reconstitute more than 60 sets of complementary matching stone artefacts. These refits, predating the Koobi Fora refits by 500Kyr, are the oldest ever studied. Here we

describe a technological analysis of the core reduction sequences, based on these refits, which allows unprecedented accuracy in the understanding of flake production processes. We can thus demonstrate greater cognitive capacity and motor skill than previously assumed for early hominids, and highlight the diversity of Pliocene technical behaviour."

"The repeated application by the knappers of the same technical principles to a whole series of cores, and during the reduction of each core, indicates an elaborate debitage scheme, implying motor precision and coordination. These principles include an appreciation of the quality of the collected raw materials, a judicious exploitation of the natural morphology of the blocks and the maintenance of adequate flaking angles during the entire debitage sequence. These show that the notion of production was already assimilated by a group of hominids in this particular area. This notion is integrated within a real debitage strategy, here well mastered and unprecedented for this period."

Semaw S. *et al.* 2.5-million-year-old stone tools from Gona, Ethiopia. *Nature*. 385:333-36. 1997.

Abstract—"These occurrences are now securely dated between 2.6—2.5 Myr. The stone tools are thus the oldest known artifacts from anywhere in the world. The artifacts show surprisingly sophisticated control of stone fracture mechanics, equivalent to the much younger Oldowan assemblages of Early Pleistocene age. This indicates an unexpectedly long period of technological stasis in the Oldowan."

"The excavated and surface artifact assemblage at EG10 and EG 12 primarily comprise simple cores, whole flakes and flaking debris. Unifacially and bifacially flaked cores comprise the "flaked pieces" category. There are numerous examples of several generations of flake scars on the core, indicating that Late Pliocene hominids had mastered the skills of basic stone knapping...The presence of large concentrations of stone artifacts at the early Gona sites shows that by 2.5 Myr some populations of Late Pliocene hominids had already mastered the basics of stone tool manufacture. The working edges of the majority of Gona artifacts are very fresh and sharp. Many of the cores show evidence of pitting and bruising. This suggest that in addition to being sources of sharp edged flakes, the cores were used as multipurpose tool, for example as hammerstones and for other pounding activities."

"The sophisticated understanding of conchoidal fracture evidence at Gona implies that the hominids that lived about 2.5 Myr ago were not novice to lithic technology."

Spoor F. Leakey MG. *et al.* Implications of new early *Homo* fossils from Ileret, east of Lake Turkana, Kenya. *Nature*. 448:688-91. 2007.

"*Homo habilis* and *Homo erectus* were contemporaries and lived together in the same lake basin, according to this article, for at least half a million years. This indicates that *H. habilis* could not have evolved into *H. erectus* as often portrayed in various evolutionary charts."

Abstract—"Here we describe two new cranial fossils from the Koobi Fora Formation, east of Lake Turkana in Kenya, that have bearing on the relationship between species of early *Homo*. A partial maxilla assigned to *H. habilis* reliably demonstrates that this species survived until later than previously recognized, making an anagenetic relationship with *H. erectus* unlikely....The new fossils...suggest that these two early taxa were living broadly sympatrically in the same lake basin for almost half a million years.

Swisher III CC. Rink WJ. Anton SC. Schwarcz HP. Curtis GH. Suprijo A. Latest *Homo erectus* of Java: potential contemporaneity with *Homo sapiens* in Southeast Asia. *Science*. 274:1870-74. 1996.

Homo erectus crania from Java have been re-dated and shown to be 27-53 ky old. "These ages are 20,000 to 400,000 years younger than previous age estimates for these hominids and indicate that *H. erectus* may have survived on Java at least 250,000 years longer than on the Asian mainland, and perhaps 1 million years longer than in Africa. The new ages raise the possibility that *H. erectus* overlapped in time with anatomically modern humans (*H. sapiens*) in Southeast Asia."

This shows that *H. erectus* cannot be the evolutionary ancestor of modern man since he was a contemporary of *H. sapiens*.

"Rather, our ages for Ngandong and Sambungmacan indicate that *H. erectus* persisted in Southeast Asia into the latest Pleistocene overlapping in time with *H. sapiens* and raise the possibility that features shared by the two species are either homoplastic or the result of gene flow."

Gene flow is a scientific way of saying the mixing of genetic material through interbreeding. The similarity of *H. sapiens* and *H. erectus* features could have been due to interbreeding. In another words the two were similar enough to interbreed. This proves that these two types of Homo are simply variations of humans.

Tattersall I. Out of Africa again ... and again? *Scientific American*. 276. April 1997.

"Recent discoveries in Kenya of fossils attributed to the new species *Australopithecus anamensis* have now pushed back the record of upright-walking hominids to about 4.2 to 3.9 million years (Myr) ago. More dubious finds in Ethiopia, dubbed *Ardipithecus ramidus*, may extend this to 4.4 Myr ago or so."

"Together with their ape-size brains and large, protruding faces, these characteristics have led many to call such creatures 'bipedal chimpanzees.'"

"Exactly how many species of early hominids there were, which of them made the tools, and how they walked, remains one of the major conundrums of human evolution."

"Thus, Swisher and his colleagues have very recently reported dates for the Ngandong *H. erectus* site in Java that center on only about 40 Kyr ago. These dates, though very carefully obtained, have aroused considerable skepticism; but, if accurate, they have considerable implications for the overall pattern of human evolution. For they are so recent as to suggest that the long-lived *H. erectus* might even have suffered a fate similar to that experienced by the Neanderthals in Europe: extinction at the hands of late-arriving *H. sapiens*."

"The first of these models holds that the highly archaic *H. erectus* (including *H. ergaster*) is nothing more than an ancient variant of *H. sapiens* and that for the past two million years the history of our lineage has been one of a braided stream of evolving populations of this species in all areas of the Old World, each adapting to local conditions, yet all consistently linked by gene exchange. The variation we see today among the major geographic populations of humans is, by this reckoning, simply the latest permutation of this lengthy process."

***Homo neanderthalensis* (Neanderthal Man)**

Akazawa T. *et al.* Neanderthal infant burial. *Nature*. 377:585-86. 1995.

A Neanderthal child was found buried and this provides another example that Neanderthals did indeed bury their dead. Neanderthal burying their dead implies certain moral and ethical qualities. Most anthropologists consider the Neanderthals to not have these qualities. This burial shows that they did indeed have these traits.

"The infant was found *in situ* in the Mousterian deposit, lying on its back with arms extended and legs flexed, indicating an intentional burial. A sub-rectangular limestone slab at the top of the head and a small piece of rectangular flint just on the infant's head were found in the most sterile layer of the burial fill. A limestone slab of this type is rare in the Dederiyeh cave deposits."

Anonymous. Neanderthal noisemaker. *Science News*. 150:328. (November 23, 1996).

"Amid stone implements typical of European Neanderthals excavated last year in a Slovenian cave, researchers found a piece of a juvenile bear's thighbone that contains four artificial holes and resembles a flute ([Miller 2000](#))."

"This bone could have been used to make noise or, possibly, music,' contends geologist Bonnie Blackwell of the City University of New York's Queens College in Flushing, N.Y. 'It would not surprise me if this was a Neanderthal's musical instrument.'"

"The Slovenian bone closely resembles several hole-bearing bones that were likely to have been used as musical instruments by humans at later European sites, according to archaeologist Randall K. White of New York University. White hopes to construct a model of the Divje Babe I bone artifact in order to explore the range of sounds that could have been produced by blowing into it."

"Neanderthals were apparently quite similar to *Homo sapiens* in their behavior and cognitive capacities,' Blackwell asserts. 'In both groups, musical traditions probably extend back very far into prehistory.'"

Arensburg B. Tiller AM. Vokandermeersch HD. Schepartz LA. Rak Y. A middle Palaeolithic human hyoid bone. *Nature*. 338:758-60. 1989.

The hyoid bone is a bone in the larynx required for speech and vocalization. This article proves that Neanderthal man could speak.

"The bone is almost identical in size and shape to the hyoid of present day populations, suggesting that there has been little or no change in the visceral skeleton (including the hyoid, middle ear ossicles, and inferentially the larynx) during the past 60,000 years...We conclude that the morphological basis for human speech capability appears to have been fully developed during the Middle Paleolithic."

Bahn PG. Neanderthals emancipated. *Nature*. 394:719-720. 1998.

This article shows how Neanderthals have been greatly underestimated. They manufactured beautiful ornaments that show a high level of technical skill. Previously it was thought that the Neanderthals simply copied or borrowed their ornaments from modern humans. This article shows that the Neanderthals made ornaments for visual display. These included pierced teeth and ivory rings. Accompanying the article are photos of the objects, which are quite beautiful.

"Attitudes to Neanderthals have always swung between extremes — take, for example, the popular reconstructions in museums and books, ranging from shaggy, subhuman brutes to creatures barely distinguishable from us. In the 1970s and 1980s, the view tended to be that not only were Neanderthals incapable of symbolic behaviour (such as the manufacture of ornaments

or deliberate human burials), but that they were little better than animals. Only occasionally were voices raised against this bleak caricature, sometimes underlining the existence of Neanderthal ornaments..."

"The Neanderthals were cultured human beings, and we cannot assume that they were incapable of 'modern behaviour'. In fact, we have probably systematically underestimated their technological and symbolic sophistication."

Balter M. Cave structure boosts Neanderthal Image. *Science*. 271:449. 1996.

A large rectangular structure built several hundred meters inside the cave, dated to more than 47,000 years ago, is the subject of this article. It indicates that Neanderthals were more intelligent than previously thought. The authors are of the opinion that the Neanderthals had mastered the use of fire and speech.

"Neandertals have won new admirers among scientists, who now credit the species with a number of advanced skills, perhaps including sophisticated speech...several hundred meters from the cave entrance is a complex quadrilateral structure constructed from pieces of stalactites and stalagmites. And the age of the structure, estimated from radiocarbon dating of a burned piece of bear bone found inside, puts it somewhat before the appearance of modern humans, at a time when Neandertals were Europe's sole human inhabitants...But they could not have done so without a sophisticated use of fire, say Randall White, a paleolithic archaeologist at New York University. 'It would have been hard for them to find their way' in the total darkness, he says. 'They would have needed to use fire, torches, lamps, some sort of portable light'—techniques considerably more advanced than those usually credited to Neandertals, who 'have usually been considered to have had an extremely rudimentary mastery of fire,' White say. Coppens adds that the discovery of such a complex artificial structure deep underground may also bear on the question of Neandertals' language abilities. To coordinate their work he says they would have needed to communicate."

Boëda E. *et al.*, Bitumen as a hafting material on Middle Palaeolithic artifacts. *Nature*. 380:336-38. 1996.

The Neanderthals of the Middle Palaeolithic period, 42,000 years ago, used bitumen to haft flint tools onto wooden handles. The bitumen was heated to an extreme temperature before it was used as tool glue. This was previously thought to be beyond the capabilities of the Neanderthals.

Abstract—"A scraper and a Levallois flake, discovered in the Mousterian levels (dated around 40,000 BC) of the Umm el Tlel site in Syria, were submitted to an organic geochemical study to identify a black substance occurring on their surface...analysis of both...confirm that the black substance is a highly weathered bitumen...it seems that the raw bitumen used had been subjected to extreme temperature. The scraper and the Levallois flake describe here are, to the best of our knowledge, the first reported example of Middle Palaeolithic artifacts hafted with bitumen to handles."

"Middle Paleolithic flint tools are usually considered to be rudimentarily made using unsophisticated techniques. It would be surprising if Middle Palaeolithic people used more complex procedures such as hafting. As far as we know, until now there has been no evidence that glue was used in the manufacture of such tools...These new data suggest that Paleolithic people had greater technical ability than previously thought, as they were able to use different material to produce tools."

"In conclusion, these two artifacts exhibit traces of bitumen that was heated before being used as a glue to secure the hafting of a handle. As far as we know this is the earliest example of bitumen being treated and used by man."

Bower B. Neandertals' disappearing act. *Science News*. 139:360-363. (June 8, 1991).

"In fact, these scientists contended, modern humans apparently evolved simultaneously in several parts of the world beginning as many as 1 million years ago."

"Both Neandertals and early modern humans buried their dead, left behind similar types of tools and engaged in comparable animal-butchery practices, showing striking cultural parallels for different hominid species."

"For the time being, 'you can classify an individual fossil in the Israeli caves any way you want,' he notes."

"For instance, 10,000-year-old stone hand axes made by modern humans in Baja Mexico look virtually identical to 250,000-year-old stone hand axes produced in Africa by a direct human ancestor, *H. erectus*, yet no one lumps the two groups into one species."

Bunney S. Neanderthals weren't so dumb after all. *New Scientist*. 123:43. (July 1, 1989).

"Paleontologists in Israel have discovered a fossil bone which shows that Neanderthals may have been just as capable of speech as modern humans. The bone, known as the hyoid, is from a Neanderthal who lived between 50,000 and 60,000 years ago. The hyoid, a small U-shaped bone, is a key part of the vocal apparatus in modern human beings."

"According to B. Arensburg and Yoel Rak of Tel Aviv University and their colleagues, the fossil hyoid, in size and shape, is just like a modern human's. The positions of the muscle attachments are also similar. The researchers believe that, despite their heavy jawbones, Neanderthals spoke a language."

Culotta E. Neanderthals were cannibals, bones show. *Science*. vol. 286:18-19. (October 1, 1999).

"Marks on the bones clearly reveal that these early humans filleted the chewing muscle from the head of two young Neanderthals, sliced out the tongue of at least one, and smashed the leg bone of a large adult to get at the marrow. The bones were apparently then dumped amid the remains of deer and other butchered mammals."

"Cut marks on the clavicle also show where the Neanderthals disarticulated the arm at the shoulder. Others reveal where they cut out tongue and jaw muscles, severed the Achilles tendon, and sliced open other tendons below the toes and at the elbow. The bones bear few sign of burning or roasting, say White, suggesting that even though the Neanderthals had fire, they ate this flesh raw or hacked it off the bone before cooking. 'The circumstantial forensic evidence (of cannibalism) is excellent.'"

Defleur A. Neanderthal cannibalism at Moula-Guercy, Ardeche, France. *Science*. 286:128-131. (October 1, 1999).

"The cave site of Moula-Guercy, 80 meters above the modern Rhone River, was occupied by Neanderthals approximately 100,000 years ago. Excavations since 1991 have yielded rich paleontological, paleobotanical, and archaeological assemblages, including parts of six Neanderthals. The Neanderthals are contemporary with stone tools and faunal remains in the same tightly controlled stratigraphic and spatial contexts. The inference of Neanderthal cannibalism at Moula-Guercy is based on comparative analysis of hominid and ungulate bone spatial distributions, modifications by stone tools, and skeletal part representations. "

"These bone modifications indicate that the human individuals were defleshed and disarticulated. After this, the marrow cavity was exposed by a hammer-on-anvil technique."

d'Errico F. *et al.* Neanderthal acculturation in Western Europe? A critical review of the evidence and its interpretation. *Current Anthropology*. 39. Supplement. 1998.

Neanderthal abilities included the manufacture of personal ornaments. At first it was believed that the incoming *Homo sapiens* had acculturated the Neanderthals, in other words the Neanderthals had traded or had been given the artifacts by modern humans. It is now common knowledge that Neanderthals were very experienced at making ornaments. These ornaments would be manufactured out of bones, antlers and various other materials. The authors of the following article stress that the Neanderthals are still suffering discrimination at the hands of most of the anthropologists. This discrimination concerns a misunderstanding of their cultural abilities.

"There can be no doubt that technological knowledge concerning bone, tooth, and ivory artifact manufacture was consciously transmitted within the group (p. 11). Seven other Chatelperronian sites, apart from the Grotte du Renne, have yielded personal ornaments consisting of perforated and sawed teeth and perforated shells of different species (p. 13) That such laws were in operation in the world of the Neanderthals constitutes further confirmation that they were fully cultured human beings and that there is no reason to assume that they were incapable of "modern behaviour." (p. 22)...we are dealing with hominids that are anatomically and culturally modern (p. 23). Furthermore, given the well documented use of ochre and the presence of burials, as well as the rich evidence for ornaments summarized by d'Erric *et al.*, it is likely that we continue to underestimate the technological and symbolic sophistication of Neanderthals (p. 24)."

Fink B. Neanderthal flute-musicological analysis. 1997. <http://www.webster.sk.ca/greenwich/fl-compl.htm>.

Article written by a trained musician explaining the musical capabilities of the recently discovered Neanderthal flute ([Miller 2000](#)). He describes the possibility of the holes in the flute being produced by chance as in the hundreds (1/680). The flute is described as being able to produce both whole and half notes and it would produce notes within the diatonic scale. Many anthropologists have claimed that the flute and its holes were produced by the chance gnawing of a scavenging carnivore. This article refutes that contention.

Folger T. Menon S. Strong bones, and thus dim-witted?—or much like us? *Discover*. 32-33. January 1997.

Neanderthals played musical instruments, used bitumen, and built structures. They were very advanced technologically.

"Ivan Turk, an archeologist at the Slovenian Academy of Sciences, uncovered what appears to be a small flute made from the thighbone of a cave bear ([Miller 2000](#)). Four precisely aligned holes puncture one side of the four-inch-long bone... 'It looks very similar to the bird bone flutes of much later period,' Blackwell says, 'and it drastically changes our opinions of Neanderthals.' The recognition that they may have had music suggests they probably had fairly well-developed speech."

"Last March archeologist Eric Boëda reported the discovery ([Boëda 1996](#)), at an open-air site in Syria, of several stone tools that were more than mere stone: on one side, away from the cutting edge, they bore traces of a black substance. Chemical analysis showed it was bitumen--a thick, sticky material used today in roofing tar--and that it had been heated to a high temperature, which would have made it liquid and supple. Boëda, who works at the University of Paris X in Nanterre, thinks the bitumen was a glue that held handles on the tools."

"Before his find, the oldest known use of bitumen as an adhesive had been a 10,000-year-old sickle from Syria, but Boëda's tools date back at least 42,500 years. In September he found a Neanderthal skull at his site, in sediments from the same period as the tools. He's fairly certain the toolmakers were Neanderthals. I think the Paleolithic period was a time when a great number of technological and symbolic innovations arose, he says."

"Another find announced last January may support that view. In a cave in southern France, near Bruniquel, a team of archeologists led by François Rouzaud of the Regional Archeological Service in Toulouse discovered the foundation of a structure whose purpose remains mysterious. Made from broken stalactites and stalagmites, the foundation measures about 13 feet by 16 feet. Based on radioactive dating of a burned bear bone found in the cave, the structure may be as much as 47,000 years old. That would place it firmly within Europe's Neanderthal era."

Gibbons A. Archaeologist rediscover cannibals. *Science*. 277:635-37. (August 1, 1997).

"At digs around the world, researchers have unearthed strong new evidence that people ate their own kind from the early days of human evolution through recent prehistory...Moreover our brawny cousins the Neandertals may have eaten each other.

"Some (although not all) of the Anaszi and Neandertals processed their colleagues. They skinned them, roasted them, cut their muscles off, severed their joints, broke their long bone on anvils with hammerstones, crushed their spongy bones, and put the pieces into pots.

Gibbons A. Neandertal language debate: tongues wag anew. *Science*. 256:33-34. (April 3, 1992).

"In February, at the annual meeting of the American Association for the Advancement of Science, University of Kansas paleoanthropologist David Frayer presented a survey of accumulating data, including the discovery of the hyoid bone and a new reconstruction of an old Neandertal skull, in launching a new attack on the idea that Neandertals couldn't speak. 'It is now time to reject the notion,' Frayer said boldly, 'that Neandertals lacked the capacity for modern speech.'"

"But in 1989 a Neandertal hyoid (throat) bone was found in Kebara cave near Mount Carmel in Israel in an excavation directed by Baruch Arensburg of Tel Aviv University. When the Arensburg group published their results in *Nature* in 1990, they argued that the hyoid was virtually indistinguishable from those of modern humans in size and shape. Neandertals 'appear to be an anatomically capable of speech as modern humans,' the authors wrote."

"In the end, this controversy underscores a central problem in paleoanthropology: how difficult it is to reconstruct behavior (including linguistic behavior) from the remains in the fossil record."

Hardy BL. *et al.* Stone tool function at the paleolithic sites of Starosele and Buran Kaya III, Crimea: Behavioral implications. *Proceedings of the National Academy of Sciences*. 98:19:10972-77. 2001.

This study documents the type of stone tools that the Neanderthals were making and the uses they were put to. Evidence indicates that they made a wide range of tools and that the tools were being hafted. Other indications reveal that the Neanderthals made use of projectiles, and that they were using survival strategies identical to those used by modern man.

"Both sites show evidence of hafting of a wide variety of tools and the possible use of projectile or thrusting spears. These analyses were performed by using two different techniques conducted by independent researchers. Combined residue and use-wear analyses suggest that both the Upper Paleolithic and Middle Paleolithic hominids at these sites were broad-based foragers capable of exploiting a wide range of resources."

"Because the maker of the Early Streletskayan lithic industry is unknown, these results suggest that different hominid groups, possibly all late Neandertals, had similar subsistence strategies despite changes in lithic and bone technologies that traditionally have been associated with modern behavior and anatomically modern hominids.

Howell FC. Early Man. Time Life Books. New York. p. 78. 1965.

"Perhaps the most important of Neanderthals man's cultural accomplishments was his registering of the first stirring of a social and religious sense. He buried his dead, which suggests an awareness of the transitoriness of life, concern over the future, and also a willingness to care for the aged. A number of Neanderthal burial sites have been discovered, both in western and eastern Europe, and they reveal a great deal. At Le Moustier in southern France (from which place the Mousterian tool industry gets its name) the grave of an 18-year-old youth was discovered in 1908. He had been carefully and reverently buried on his side, his legs bent, his head cushioned on a pile of flaked flints and resting on his right arm as it might in sleep. Buried with the body were several stone implements and a number of animal bones. Other Neanderthal burials excavated since then show a similar careful laying out of the body and a thoughtful addition of tools and bones. In a cave at La Ferassie, also in southern France, a family of two adults and four children was discovered lying buried in the floor. All six had been placed with their bodies lined up in an east-west position. Evidence of this sort clearly indicates that Neanderthal man believed in some kind of a life after death and that it was probably not unlike the life he lived on earth, since he seemed to be trying to help his corpses along on their journeys with tools and food. Death itself appears to have been regarded as a kind of sleep, since corpses were carefully arranged in sleeplike positions." p. 130

Hublin J. Spoor F. Braun M. Zonneveld F. Condemi S. A late Neanderthal associated with Upper Paleolithic artifacts. *Nature*. 381:224, 1996.

Evidence that Neanderthal man was culturally advanced. This find was associated with personal ornaments. Many believe that Neanderthal man was so inferior that he would not use personal ornaments. This article shows otherwise.

Ivanhoe F. Neanderthals had rickets. *Science Digest*. 69:35-36. (February 1971).

"Neanderthal man may have looked like he did not because he was closely related to the great apes, but because he had rickets, an article in the British publication *Nature* suggests."

"The diet of Neanderthal man was definitely lacking in Vitamin D during the 35,000 years he spent on earth."

Kappelman J. They might be giants. *Nature*. 387:126-127. (May 8, 1997).

"Body mass then seems to have increased through time, with late archaic *Homo sapiens*—dating from just 75,000-36,000 yr BP and often collectively called 'Neanderthals'—being about 30% larger than the living worldwide human average (or about 24% larger than living high-latitude humans). But modern humans (dating in this study from 90,000 yr to the present, and overlapping in time with archaic *Homo sapiens*) show a decrease in body mass."

"Other data show that archaic *Homo* had a more strongly constructed skeleton than all but the very earliest modern humans, and the pronounced muscle markings on the bones are believed to indicate great strength."

Kay RF. Cartmill M. Balow M. The hypoglossal canal and the origin of human vocal behavior. *Proceedings of the National Academy of Sciences*. 95:5417-19. 1998.

"The hypoglossal canal is the opening in the skulls through which the nerves of the tongue pass through. This study shows that the *Australopithecus* fossils resemble the modern day chimpanzees, and pygmy chimpanzees and the Neanderthals resemble modern day humans. Thus Neanderthals had the physical equipment necessary for speech. Included in the article is a chart showing this relationship."

Abstract—"Canals of gracile *Australopithecus*, and possibly *Homo habilis*, fall within the range of extant *Pan* and are significantly smaller than those of modern *Homo*. The canals of Neanderthals and an early "modern" *Homo sapiens* (Skhul 5), as well as of African and European middle Pleistocene *Homo* (Kabwe and Swanscombe), fall within the range of extant *Homo* and are significantly larger than those of *Pan troglodytes*. These anatomical findings suggest that the vocal capabilities of Neanderthals were the same as those of humans today. Furthermore, the vocal abilities of *Australopithecus* were not advanced significantly over those of chimpanzees whereas those of *Homo* may have been essentially modern by at least 400,000 years ago. Thus, human vocal abilities may have appeared much earlier in time than the first archaeological evidence for symbolic behavior."

"Estimates of the size of the hypoglossal canal relative to that of the oral cavity in the fossils, based on measurements of jaws associated with the sampled occipitals in Skhul 5, La Ferrassie 1, and Kabwe and on measurements of similar adult specimens from the same site in the Sterkfontein material, yield similar results: The Pliocene South African hominids resemble African apes, and the other fossil hominids resemble modern *Homo*."

Koller J. Baumer U. Mania D. High-tech in the Middle Palaeolithic: Neandertal-manufactured pitch identified. *European Journal of Archaeology*. 4:3:385-97. 2001.

Reveals how the people of the Palaeolithic (Neanderthals), manufactured and used birch bark pitch as a high tech glue. The manufacture of this adhesive required a high degree of technical and intellectual skill.

"Today, comparable pitches can easily be produced with modern technical methods, i.e, using airtight laboratory flasks and temperature control facilities. However, any attempt at simulating the conditions of the Neandertal period and at producing these birch pitches without any of these modern facilities will soon be met with many difficulties. This implies that the Neandertals did not come across these pitches by accident but must have produced them with intent. Conscious action is, however, always a clear sign of considerable technical capabilities."

"The pitch finds from Konigsau therefore demonstrate that the Neanderthals must have possessed a high degree of technical and manual abilities, comparable to those of modern *Homo sapiens*."

Kunzig R. Learning to love Neanderthals. *Discover Magazine*. 20:8. August 1999.

This article gives evidence that Neanderthals interbred with archaic humans. This would imply that they are of the same Genesis "kind." (see the section on [DNA studies](#)) Also red ochre has been found in many of the Neandertal burials. The book of Genesis states that God revealed to

man that life was in the blood (Gen 9:4). Neanderthal may have been trying to give those buried the symbolic "blush of life" by burying his dead with red ochre.

"Instead the two kinds of human were so alike that in Portugal, at least, they intermingled—and made love—for thousands of years."

"They were stained reddish with ochre. Red ochre is one of the things Upper Paleolithic moderns painted caves with, but they also buried their dead with it; the color seems to have had symbolic significance."

"But if whole populations of Neanderthals and Cro-Magnons were blending, the notion that Neanderthals were replaced by immigrant moderns begins to lose meaning. To out-of-Africa proponents, such blending would conflict with the genetic and fossil evidence, and with the simple observation that people today look like Cro-Magnons and not like Neanderthals. To paleontologists who don't believe the out-of-Africa model, however—who think modern humans evolved all over the world from interbreeding populations of archaic humans including Neanderthals—Trinkaus's Lapedo kid is welcome news."

"That debate concerns how smart Neanderthals were, and it is centered on the cave digs at Arcy. When French archeologists excavated there in the 1950s, they found dozens of animal-tooth pendants, bone tools, and 40 pounds of red ochre spread over the floor. At other sites, such artifacts have been attributed to modern humans. A few years ago, though, after Hublin ct-scanned a skull fragment found alongside the artifacts, and revealed the inner ear, he convinced most people that the bone was that of a Neanderthal, and so were the artifacts."

Miller JA. Gross MM. Locomotor advantages of Neanderthal skeletal morphology at the knee and ankle. *Journal of Biomechanics*. 31:355-61. 1998.

The ankle and knee of Neanderthal man was extremely powerful. "Neandertals would have a distinct advantage compared to recent humans during demanding locomotor activities...."

Miller MK. Music of the Neanderthals. *Dispatches From the Field AAAS 2000 Annual Meeting*. February 21, 2000.

The Neanderthal people appreciated music as shown by the following article. At the Divje Babe cave in the Slovenian Alps, Ivan Turk of the Slovenian Academy of Sciences, unearthed a bone flute fashioned from the femur of a cave bear in 1996. This flute with four properly spaced holes would allow the flute to play both half tones and full tones. At the annual 2000 American Association for the Advancement of Science (AAAS) meeting Jelle Atema a marine biologist professor and an accomplished flute player played a replica of this flute and mesmerized the packed meeting hall.

"The flute, believed to be the earliest musical instrument ever found, was discovered in 1996 among the remains in a Neanderthal cave site by Slovenian archaeologist Ivan Turk. Made from the thighbone of a cave bear, it was dated at 53,000 years old...When Atema traveled to the Slovenian Academy of Science and saw the fossilized cave-bear bone, with two nearly perfect round holes and two partial holes arranged precisely along one side, he knew at once that it was a flute and a fairly sophisticated one at that."

"Whatever the reason they played them, these flutes represent a tremendous technological advance, Atema says, and we are probably underestimating what other achievements these ancient human ancestors were capable of...If we were every to meet, I think that if I pulled out contemporary flute and they pulled out their cave-bear flute and we started making sounds together in a very short time we would have converged on a common musical language."

Niewoehner WA. Bergstrom A. *et al.* Manual dexterity in Neanderthals. *Nature*. 422:395. 2003.

Many anthropologists consider the Neanderthals to have been physically less developed than modern humans. This journal articles shows that not only were the Neanderthals hands able to do everything that modern human hands can do, they were stronger and in some ways more agile than modern humans.

"Despite their ability to make and use stone tools, Neanderthals were presumed to have had limited manual dexterity on the basis of the anatomy of their thumb and forefinger—a contention that has been called into question. Here we investigate the likely extent of Neanderthal thumb function by using a three dimensional dynamic simulation that is based on the anatomical details and articular morphology of the thumb and index finger. We find that these digits could make tip-to-tip contact, and conclude that manual dexterity in Neanderthals was probably not significantly different from that of modern humans."

"In fact, given the open configuration of the Neanderthal trapezial–metacarpal-1 joint, all Neanderthal thumbs were probably more mobile than that of modern humans."

"As there is no significant difference between Neanderthals and modern humans in the locations of their muscle and ligamentous attachments, there remains no anatomical argument that precludes modern-human-like movement of the thumb and index finger in Neanderthals."

Ramirez FV. *et al.*, Surprisingly rapid growth in Neanderthals. *Nature*. 428:936-39. 2004.

Kelly J. Neanderthal teeth lined up. *Nature*. 428:904-5. 2004.

Both of these articles purports to show that Neanderthals matured very quickly and that most of them reached puberty in the mid-teens. This is based on the growth rings of the tooth enamel. Perikymata or disruptions of the growth of tooth enamel were measured. From this it was inferred (guessed) that the Neanderthal mature rapidly and had a short life span. This is in contradiction to the Biblical record.

Dr. Cuzzo ([Cuzzo 1999](#)) has come to the exact opposite conclusion based on measurements of the perikymata growth in Neanderthals. He assumes more time is indicated by each perikymata ring, 14-21 days, as opposed to the evolutionist's assumptions of 7-8 days. With this longer time period between the formation of each perikymata ridge the Neanderthals would be maturing slower and living longer. This contrasting view indicates that many assumptions go into the interpretation of the fossil data.

Ramirez 2004 Abstract—"...Neanderthals were characterized by having the shortest period of dental growth. Because dental growth is an excellent indicator of somatic development¹, our results suggest that Neanderthals developed faster...Neanderthals, despite having a large brain, were characterized by a short period of development. "

Kelley 2004—"The authors go on to make a number of more far-reaching claims. Based on their finding of rapid anterior-tooth crown formation in Neanderthals, they argue for more rapid growth as a whole and earlier attainment of adulthood, perhaps as early as 15 years of age, instead of approximately 18–20 years as in *H. sapiens*. This inference follows from another fascinating feature of dental development — that the overall period of development, and the timing of certain

developmental events in particular, are strongly correlated with the pace at which an organism proceeds through its life stages, also known as its life history."

Richards MP. *et al.*, Neanderthal diet at Vindija and Neanderthal predation: the evidence from stable isotopes. *Proceedings of the National Academy of Sciences*. 97:13:7663-66.

The findings of this article points to the Neanderthals as being highly effective top of the food chain predators. The hunting of animals requires a large amount of technical skill and intelligence.

"For these five Neanderthal specimens, therefore, we have stable isotope data indicating that geographically and chronologically dispersed Neanderthals consistently behaved as top-level carnivores...This finding is in agreement with the indirect archeological evidence and strongly points to the Neanderthals having been active predators."

Szpir Michael. Nasty brutish and short? *American Scientist*. 81:328-29. July 1993.

Presents two views of Neanderthal. The first view based on the interpretation of Boule, which was short and apish. The second based on current fossil work show a more modern rendering. Two artistic renderings of Neanderthal are presented completely at odds with each other yet both based on the same fossils! Highlights the importance of bias and perspective when analyzing fossil remains.

Tattersal, Ian. *The Last Neanderthal*. Westview Press. Boulder, CO. 1999.

Neanderthals were culturally equal to other ancient and some contemporary humans. At a Neanderthal site a cast of a tent peg was found. This shows that they set up tents and shelters (p. 150). They used stone tools (p. 157-60). They made decorative items (p. 163). They buried their dead and colored them with ochre/iron ore pigments (p. 168-70). On a darker note they were cannibalistic (p. 168). Present day humans have engaged in all of these activities.

Trinkaus E. The Neanderthals. *Scientific American*. 118-33. December 1979.

This article shows the power of Neanderthal morphology through a comparison of some of the muscular and skeletal features of modern man and Neanderthals. Demonstrates Neanderthals to be well adapted and not primitive. "To summarize, Boule and others were mistaken: Neanderthals were not less human than modern man... It is now clear that the Neanderthals had the same postural abilities, manual dexterity and range and character of movement that modern men do."

Trinkaus E. *et al.* An early modern human from the Pesteru cu Oase, Romania. *Proceedings of the National Academy of Sciences*. 100:20:11231-36. 2003.

Neanderthal Man and modern man interbred according to this article. This fossil mandible shows both *Homo sapiens* and Neanderthal characteristics. This implies that they interbred which means they were of the same species.

Abstract—"It (the mandible) therefore presents a mosaic of archaic, early modern human and possibly Neanderthal morphological features, emphasizing both the complex population dynamics of modern human dispersal into Europe and the subsequent morphological evolution of European early modern humans."

"The 2002 discovery of a human mandible at the Pesteru cu Oase in southwestern Romania indicates that the earliest 'modern' Europeans combined a variety of archaic *Homo*, derived early

modern human, and possibly Neandertal features in their craniofacial skeletal and dental morphology."

Trinkaus E. Zimmerman MR. Trauma among the Shanidar Neanderthals. *American Journal of Physical Anthropology*. 57:61-76. 1982.

The Shanidar Neanderthals unearthed in the Middle East reveal that the Neanderthal life style was extremely traumatic. These fossils from four individuals indicate that they suffered many violent injuries. These injuries include: broken bones, blows to the head that caused blindness, and a penetrating wound to the ribs, to name only a few. This accords well with the Biblical record that states that the earth was "filled with violence."

Wild EM. *et al.* Direct dating of Early Upper Palaeolithic human remains from Mladec. *Nature*. 435:332-35. 2005.

These human remains dated to 31 kyr ago have Neanderthal characteristics. This leads some to speculate that modern human and Neanderthals could have interbred with each other. Interbreeding indicates that both are of the same species. The derived dates overlap with the time of other well-documented Neanderthal remains.

"The Mladec human remains are universally accepted as those of early modern humans since the analysis of Szombathy. However, there is an ongoing debate as to whether they exhibit distinctive archaic features, indicative of some degree of regional Neanderthal or are morphologically aligned solely with recent humans and therefore document only a dispersal of modern humans into Europe. The purportedly archaic, or Neanderthal, features include aspects of the sagittal cranial profile and robust supraorbital regions in the Mladec 5 and 6 males, distinctive occipital bunning in Mladec 3, 5 and 6, large palatal and dental dimensions of Mladec 8, the large crowns of the Mladec 9a, 10 and 51 canines, and articular hypertrophy of some of the postcrania. Moreover, although they are robust compared to recent females...The Neanderthal affinities of some of the anatomical features have been questioned, but ultimately the implications of the Mladec assemblage for human population dynamics with the transition to modern humans in Europe are dependent on whether they can be dated close to the transitional time period."

Homo sapiens

Bower B. A walk back through evolution. *Science News*. 135:251. (April 22, 1989).

"Three hominids made some remarkable impressions 3.5 million years ago. They walked across damp volcanic ash that later hardened and preserved their footprints at the Tanzanian site of Laetoli."

"But the first detailed study of the gaits and footprints of modern people who walk barefooted indicates the Laetoli prints are much like those of *Homo sapiens* and were probably not produced by Lucy's relatives, reports Russell H. Tuttle of the University of Chicago."

"The few toe bones found at Hadar curve downward in an ape-like manner. Hominids with curved toes could not have made the Laetoli footprints, he maintains."

Patterson B. Howells WW. Hominid humeral fragment from early Pleistocene of Northwestern Kenya. *Science*. 156:64-66 (7 April 1967)

"For metrical comparisons, samples of 40 human and 40 chimpanzee humeri were used, without regard to sex. We took seven measurements designed to register certain morphological

differences among species. In these diagnostic measurement Kanapoi Hominoid 1 is strikingly close to the means of the human sample. "

Howells WW. *Homo erectus* in human descent: ideas and problems. Sigmon BA. Cybulski JS. eds. *Homo erectus Papers in Honor of Davidson Black*. p. 79-80. University of Toronto Press. Toronto. 1981.

"The humeral fragment (KP 271) from Kanapoi, with a date of about 4.4 million, could not be distinguished from *Homo sapiens* morphologically or by multivariate analysis by Patterson and myself in 1967 (or by much more searching analysis by others since then). We suggested that it might represent *Australopithecus* because at that time allocation to *Homo* seemed preposterous, although it would be the correct one without the time element. "

McHenry H. Fossils and the mosaic nature of human evolution. *Science*. 190:425-431 (31 Oct. 1975).

"The hominoid distal humerus is ideal for multivariate analysis because there are such subtle shape differences between species, particularly between *Homo* and *Pan*, which are difficult to distinguish in a trait by trait (univariate) analysis. Multivariate analysis shows that although chimpanzee and human humeri overlap in almost all metrical characteristics taken one at a time, they differ when all traits are treated together in a single analysis where the bones are treated as integrated complexes. The results show that the Kanapoi specimen, which is 4 to 4.5 million year old, is indistinguishable from modern *Homo sapiens*. "

Molnar, Stephen, *Human Variation: Races, Types and Ethnic Groups* Prentice Hall. Englewood Cliffs, NJ. pp. 253. 1975.

"In modern populations ... there is a wide range in variation, however. The lower end of the range is well below the capacity for certain fossil hominids, yet there is no evidence that these individuals are any less intelligent than persons with larger cranial vaults.... Variation of plus or minus 100 cc about the mean is evident in most European populations. These individuals with larger or smaller cranial capacities are normally functioning and intellectually competent individuals, in fact, there are many such persons with 700 to 800 cc capacities."

Ruff CB. Trinkaus E. Holliday TW. Body mass and encephalization in Pleistocene *Homo*. *Nature*. 387:173-6. 1997.

Body mass and brain size have decreased for modern man as compared to ancient Pleistocene humans or Neanderthals.

Abstract—"Many dramatic changes in morphology within the genus *Homo* have occurred over the past 2 million years or more, including large increase in absolute brain size... On the basis of an analysis of 163 individuals, body mass in Pleistocene *Homo* averaged significantly (about 10%) larger than a representative sample of living humans."

"Our results indicate that a decrease in average absolute brain size over the past 35,000 years within *H. sapiens* was paralleled by a corresponding decrease in average body size, supporting earlier suggestions of a general correlated size reduction in human skeletons since the early Upper Paleolithic. This decreased continued through the Neolithic, at least in Europe."

White T. *et al.* Pleistocene *Homo sapiens* from Middle Awash, Ethiopia. *Nature*. 423:742-47. 2003.

This article describes the excavation of three anatomically modern crania. Two belonged to adults the third belong to child age 6-7. These skulls have been dated by argon dating of surrounding volcanic tuff as being about 160,000 years old. This indicates that the age for modern humans, *Homo erectus* and Neanderthal man all overlap. In fact the Awash fossils predate the classic Neanderthal fossils. Which is what would be expected if they were all variations of the species *Homo sapiens*.

"The Herto crania are thus not Neanderthals. They exhibit none of the notably derived features that are common to those Eurasian specimens attributed to a Neanderthal lineage represented by a multitude of fossils of successive ages, and culminating in the 'classic' Neanderthals. The Herto hominids are contemporaneous with obvious antecedents of the 'classic' Neanderthals, but do not resemble them...When considered with the evidence from other sites, this shows that modern human morphology emerged in Africa long before the Neanderthals vanished from Eurasia.

Wolpoff M. Thorne A. The case against Eve. *New Scientist*. 130:37-41. (June 22, 1991).

"What made the Eve theory revolutionary was not so much the idea of a single place of origin, but that modern humans (wherever they evolved) replaced, rather than mixed with, indigenous archaic humans."

"The Eve theory makes a number of predictions, which biologists can test by consulting the fossil record. According to the theory, Eve must have lived in Africa at the beginning of the Upper Pleistocene, between 100,000 and 200,000 years ago."

"Crucially, there should be no continuity over time in the anatomical characteristics of humans living in any one region. By stark contrast, if modern people evolved locally in many different places, then each population ought to resemble its own antecedents. In this case regional continuity in the features of human fossils should be the norm."

"In conflict with the Eve theory, our measurements show that modern Chinese, Australasians and Europeans each resemble their local predecessors much more than they resemble archaic Africans. But that is not all. In each region of the world, we have uncovered links that tie living populations to their own local antecedents, whose remains are preserved in the fossil record for the area."

"So, if not in Africa, where did we originate? The fossils point to several places rather than just one. The era of the modern human began with a smooth transition rather than an abrupt invasion. Humans may be unique, but the signs are that we are not a new species."

Genetic/DNA Studies

Adcock GJ. Dennis ES. *et al.* Mitochondrial DNA sequences in ancient Australians: implications for modern human origins. *Proceeding of the National Academy of Science*. 98:2:537-542. 2001.

"These findings were interpreted as strongly supporting the recent out of Africa model. However, this interpretation failed to recognize that the demographic history of a species cannot be inferred from the pattern of variation of a single nucleotide segment. Patterns of variation in different regions of the genome must be considered and interpreted in the context of paleontological and archeological evidence."

"The results (of other studies) have been widely argued as evidence that Neandertals did not contribute genes to contemporary Europeans, thus supporting the recent out of Africa model. This interpretation may not be justified. mtDNA is a small component of the total genome, and the failure of a mitochondrial lineage to survive to the present does not imply a similar failure for the remainder of the genome. There is morphological evidence for the survival of Neandertal genes in Europe after the arrival of Cro-Magnon people."

"The dating of Lake Mungo 3 (LM3) to 62 ± 6 ka implies that *gracile* morphology arrived in Australia well before *robust* morphology."

"These results show that...the ancient Aboriginal sequences, including those from individuals with both *robust* and *gracile* morphologies, are within a clade that includes the sequences of living Aboriginal Australians, and that they therefore diverged after the MRCA of contemporary Aboriginal sequences. mtDNA lineages fail to differentiate individuals with clearly distinct morphologies."

"Implications for Human Origins. LM3, whose sequence is reported here, is the oldest individual dated accurately, and possibly the oldest human, from which DNA has been successfully recovered and analyzed. We conclude that his mtDNA and the Insert sequences form a monophyletic group relative to all of the other human sequences that probably diverged before the MRCA of living human mtDNA sequences. This conclusion implies that the most divergent known mtDNA lineage from an 'anatomically modern' human is from an Australian individual. This finding does not imply that all living people originated in Australia, any more than previously described deep lineages in Africa demand a recent origin of humans on that continent. Deep lineages in Africa and our finding of an even deeper lineage in Australia are consistent with a number of possible models of the demographic and evolutionary history of our species."

"Lack of association between the survival of nuclear and mtDNA lineages is expected because they have different transmission patterns between generations. This point is emphasized by the high frequency of the Insert on chromosome 11 in many human populations. Despite having the Insert, none of these populations have the LM3/Insert mtDNA lineage from which the Insert must originally have been transferred. There must have been genetic exchange between people with mtDNA genomes from the LM3/Insert lineage and those with the contemporary lineage. Similar exchanges between people with other Pleistocene mtDNA lineages, like that of the Feldhofer Neandertal individual, may have occurred."

"This pattern of sequence variation is consistent with a population expansion following a population bottleneck and is generally taken as supporting the recent out of Africa model. Under this model, all contemporary sequences spread globally with an expanding population that replaced all other people and all other lineages."

"Our data present a serious challenge to interpretation of contemporary human mtDNA variation as supporting the recent out of Africa model."

"An alternative explanation is that the LM3yInsert mtDNA lineage was replaced by a spread of the 'contemporary' mtDNA lineage through late Pleistocene human populations under directional selection pressure.

" Our analysis has shown that anatomical features and the mtDNA of particular individuals may have different evolutionary paths, and some nuclear gene lineages have genealogical and or geographical patterns that are different from those of mtDNA."

Aiello LC. The fossil evidence for modern human origins in Africa: a revised view. *American Anthropologist*. 95:1:73-96. 1993.

Shows the fossil evidence for the four major theories of mans evolutionary development. They include: 1) The African replacement model, or out-of-Africa theory. 2) The (African) hybridization and replacement model. 3) The assimilation model. 4) The multiregional evolution model.

The author states there is not enough evidence to fully decide on one theory to the exclusion of the others. A good overview of the competitive nature of the struggle between the genetic and fossil interpretations of human evolution.

"However, the genetic evidence is not infallible and human paleontologist should not disregard the inferences drawn from the fossil record. This is despite the fact that some geneticists strongly imply that inferences from the fossil record should take second place to the genetic evidence. At the same time, human paleontologists should remember that an integrated theory for the appearance of modern humans must account for all kinds of available evidence, evidence not only from the fossil and archeological records but also from the genetics of living people."

Barinaga, M. "African Eve" backers beat a retreat. *Science*. 255:686-87. 1992.

Showing the flaws in the proposed "out of Africa" Mitochondrial Eve theory as reported in Cann 1987, Wilson 1992).

Bowler JM. Johnston H. *et al.* New ages for human occupation and climatic change at Lake Mungo, Australia. *Nature*. 421:837-40. 2003.

This "scientific" study contradicts the previous "scientific" study done on the Australian fossils at Lake Mungo ([Adcock 2001](#)). The British scientific journal *Nature* is philosophically aligned with the Out of Africa mtDNA Eve studies. They are also in agreement with the scientific DNA studies that show that Neanderthal man is not genetically related to modern man. Old (60 + kyr years) Lake Mungo fossil finds would show that both of these theories are incorrect. *Nature* therefore published this paper to refute the conclusion of the Adcock paper. These two studies are excellent examples showing that depending on which type of evolution you agree with you can find scientific evidence to support your conclusion."

This paper also reveals that the radiometric dates are very fluid and you can pick and chose the date you want to use. The Lake Mungo fossils have been dated as follows: Th/U and Pa/U ages of 89 kyr (upper limit) and 50 kyr; electronic spin resonance (ESR) from a tooth 85 kyr—56 kyr, depending on the type of ESR dating used; optical ages of 60 kyr—40 kyr; radiocarbon dates of 20—26 kyr ago. Therefore evolutionist can opt for any date between almost 90 kyr and 20 kyr ago.

Abstract—"Australia's oldest human remains, found at Lake Mungo, include the world's oldest ritual ochre burial (Mungo III) and the first recorded cremation (Mungo I). Until now, the importance of these finds has been constrained by limited chronologies and palaeoenvironmental information. Mungo III, the source of the world's oldest human mitochondrial DNA, has been variously estimated at 30 thousand years (kyr) old, 42–45 kyr old and 62 ± 6 kyr old, while radiocarbon estimates placed the Mungo I cremation near 20–26 kyr ago. Here we report a new series of 25 optical ages showing that both burials occurred at 40 ± 2 kyr ago and that humans were present at Lake Mungo by 50–46 kyr ago, synchronously with, or soon after, initial occupation of northern and western Australia."

"The importance of Lake Mungo to world archaeology and human evolution has recently been accentuated by claims for direct dating of the Mungo III skeleton to 62 ± 6 kyr ago and for the extraction of mitochondrial DNA from these remains. The Mungo I and III burials were both

inserted near the Lower to Upper Mungo stratigraphic boundary. Mungo III was placed in a grave 80–100 cm deep, and traces of pelletal clay and dark, reworked soil were found in the grave fill. The grave was dug into sands, dated here to 42 ± 3 kyr ago, underlain by a thin band of pelletal clay derived from the lake floor (Fig. 2). The overlying unit sealing the grave is dated to 38 ± 2 kyr ago. Therefore, Mungo III was buried 40 ± 2 kyr ago, close to the age estimates from two previous studies, but 20 kyr later than the most recent claims."

"Reasons for the 20-kyr age discrepancy invite speculation. One factor may involve uncertainties in U-migration, which is enhanced in carbonate-rich sedimentary deposits such as those studied here. U-migration can considerably affect the accuracy of 'open system' ESR and U-series ages, such as those used to date the Mungo III skeletal remains. The previous two optical ages for the Mungo III burial relate to sediments collected in uncertain stratigraphic contexts more than 300m away from the burial site. The Mungo I cremation is indistinguishable in age from the Mungo III burial. Our new age constraints for Mungo I are 15– 20 kyr older than the previous radiocarbon-based estimates, a difference we attribute to contamination of the radiocarbon samples by younger carbon. Our study shows that humans were present at Lake Mungo as early as 50–46 kyr ago. We find no evidence to support claims for human occupation or burials near 60 kyr ago."

Cann RL. Stoneking M. Wilson AC. Mitochondrial DNA and human evolution. *Nature*. 325:31-36, 1987.

Classic study showing how mitochondrial DNA was used to support the "Out of Africa" theory of human evolution. This study was later shown to be flawed, although it is still commonly accepted in principle ([Barinaga 1992](#)).

Cohen J. Relative differences: the myth of 1%. *Science*. 316:1836. 2007.

Evolutionists have repeatedly stated that the difference between the chimpanzee DNA and human DNA differs by 1% and that human and chimpanzees have 99% of the same genetic material. This study indicates that this long held pillar of evolutionary genetics is wrong. The correct amount is almost a whopping 7%. Also many other differences in linkages and large-scale differences in genetic material occur, so much so that it cannot be quantified.

Genomewise, humans and chimpanzees are quite similar, but studies are showing that they are not as similar as many tend to believe... "For many, many, years, the 1% difference served us well because it was under appreciated how similar we were," says Pascal Gagneux, a zoologist at UC San Diego. "Now it's totally clear that it's more a hindrance for understanding than a help"... Researchers are finding that on top of the 1% distinction, chunks of missing DNA, extra genes, altered connection in gene networks, and the very structure of chromosomes confound any quantification of "humanness" versus "chimpanzness." "There isn't one single way to express the genetic distance between two complicated living organisms," Gagneux adds... Hahn and co-workers reported that human and chimpanzee gene copy number differ by a whopping 6.4%... In the cortex for example 17.4% of the connection were specific to humans... Could researchers combine all of what's known and come up with a precise percentage difference between humans and chimpanzees: "I don't think there's any way to calculate a number," say geneticist Svante Pääbo, a chimp consortium member based at the Max Planck Institute of Evolutionary Anthropology in Leipzig, Germany. "In the end, it's a political and social and cultural thing about how we see our differences."

Duarte C. *et al.* The early Upper Paleolithic human skeleton from the Abrigo do Lagar Velho (Portugal) and modern human emergence in Iberia. *Proceedings of the National Academy of Sciences*. 96:7604-09. 1999.

This study refutes the Neanderthal DNA studies that indicate that there was no genetic mixing of the Neanderthals and modern humans. According to this study humans and Neanderthals interbred.

Abstract—"This morphological mosaic indicated admixture between regional Neandertals and early modern humans dispersing into southern Iberia. It establishes the complexities of the Late Pleistocene emergence of modern humans and refutes strict replacement models of modern human origins."

"The presence of such admixture supports the hypothesis of variable admixture between early modern humans dispersing into Europe and local Neandertal populations, It runs counter to the interpretation that, in western Europe, this transition involved the extinction without descent of the Neandertals and their complete replacement by dispersing early modern humans with more elaborate technological and sociocultural systems. "

Frayner DW. *et al.* Theories of modern human origins: the paleontological test. *American Anthropologists*. 95:1:14-50. 1993.

A description of the field/fossil evidence that contradicts the mtDNA out-of-Africa studies and other DNA studies that purport that Neanderthal and modern human populations are not related.

"While many previous and some current models about the later aspects of human evolution are riddled with untestable or non-excluding hypotheses, the difference between the "Eve" and the multiregional evolution models are so profound it is impossible for both to be correct."

"In spite of these points of agreement, multiregional evolution and the Eve theory are largely contradictory."

"From our analyses of the East Asian material, we find undeniable evidence for the development of distinctive morphologies that are not only specific to the region, but that also persist over the long sequence of fossil to many recent and living Asians."

"The case for continuity in Europe has the most contentious history, primarily because of the deep-seated opinion in Europe and the United States that Neanderthals could have had nothing to do with subsequent European Evolution... Some assume that no transitional fossils exist and that none of the Neanderthal features continue into the Upper Paleolithic, as the Eve theory requires...However, the rich skeletal record from the Middle and Upper Paleolithic of Europe rejects each of these contentions. ...the actual evidence provided by the extensive fossil record of late Pleistocene Europe show considerable continuity between Neanderthals and subsequent Europeans."

"The persistence of a large number of feature is improbable if Neanderthals were completely replace or 'swamped out' by an invasion of people from Africa (or anywhere else)."

"In short while no one would argue that European Neanderthals are identical to the succeeding Upper Paleolithic people, the two groups share a number of cranial and postcranial nonmetric features signaling regional continuity. As with other geographic areas, the more modern inhabitants bear the morphological marks of their more archaic forerunners...Such evidence is incompatible with the predictions of the Eve total replacement theory. "

"In summary, the African fossil record offers little support of the Eve hypotheses...Nothing in the African fossil record supports this continent as a unique motherland."

"Continued studies have supported the original interpretation...the Levant (Middle-East) sample as a whole cannot be clearly separated into "Neanderthaloid" and "modern' sets on either anatomical or behavioral (archeological) grounds. The total variation is less, often considerably less, than normally found in a modern city...although the Eve theory insists that these two sets of individuals must represent different species and that one is so superior to the other that a complete replacement occurred."

"Because there are many equally parsimonious solutions to the mtDNA variation and because some of these coalesce to non-African ancestries, it is no longer statistically valid to define Africa as the ancestral place from the mtDNA data."

"In short, with the continuing analysis of mtDNA and reconsideration of nuclear DNA variation it is becoming increasingly clear that the original prediction of recent African origin for all modern humans is without a genetic basis."

"From the paleontological analyses presented here, it is apparent that this model does not hold up under scrutiny and must be rejected."

Gagneux P. *et al.* Mitochondrial sequences show diverse evolutionary histories of African hominoids. *Proceedings of the National Academy of Sciences.* 96:5077-82. 1999.

A comparison of the genetic diversity of humans and primates. It was found that the humans had the smallest genetic diversity of the group. This would indicate that sometime in the past the genetic diversity of the human line was very small. In other words the human line almost went extinct. The primates studied included various species of chimpanzees, and two species of gorillas. The interbreeding of the chimpanzees and gorillas would increase the genetic diversity. This would be the situation during the flood scenario when only 8 people would be the source for all modern human DNA.

"...we show that these taxa have very different amounts and patterns of genetic variation, with humans being the least variable. Strong evidence is presented for a relatively recent demographic bottleneck, selective sweep, or population expansion in two clades, humans and eastern chimpanzees. "

Gee H. Statistical cloud over African eden. *Nature.* 355:583. 1992.

"Reconstructions of the family tree of modern people by phylogenetic analysis based on extant mitochondrial DNA appears unexpectedly difficult. An African Eden seems not yet proven."

Gibbons A. Calibrating the mitochondrial clock. *Science.* 279:28-29. 1998.

This article reveals three points about human fossil DNA studies. The first that the clock used to measure the DNA differences, which is based on the mutational rate, may be flawed. It gives slow mutational rates that are in reality occurring at a much higher rate. The second is that the mutational rate that is timed is the mutational rate between chimpanzees and humans. Since evolution is correct then it is assumed that we have descended from the great apes. This is circular reasoning. The third point is that based on these faster mutational rates mitochondrial Eve existed about 6,000 years ago not 200,000 years ago ([Rhode 2004](#)).

"Evolutionists have assumed that the clock is constant, ticking off mutations every 6,000 to 12,000 years or so. But if the clock ticks faster or at different rates at different times, ([Parsons 1997](#))some of the spectacular results—such as dating our ancestor's first journeys into Europe at

about 40,000 years ago—may be in question. 'We've been treating this like a stopwatch, and I'm concerned that it's as precise as a sundial,' says Neil Howell, a geneticist at the University of Texas Medical Branch in Galveston."

"The most widely used mutation rate for noncoding human mtDNA relies on estimates of the date when humans and chimpanzees shared a common ancestor, taken to be 5 million years ago. That date is based on counting the mtDNA and protein differences between the great apes and timing their divergence using dates from fossils of one great ape's ancestors. In humans, this yields a rate of about one mutation every 300 to 600 generations, or one every 6,000 to 12,000 years...So they were 'stunned' to find ...one mutation every 40 generations, or one every 800 years."

"For example, researchers have calculated that 'mitochondrial Eve'—the woman whose mtDNA was ancestral to that in all living people—lived 100,000 to 200,000 years ago in Africa. Using the new clock, she would be a mere 6,000 years old."

Gura T. Bones, molecules...or both? *Nature*. 406:230-233. 2000.

Evolutionary trees drawn up from morphology do not agree with evolutionary trees drawn up from genetic studies. This article has a good overview of the disagreement between those that rely on genetics and those that rely on fossils for their interpretation of the fossil and evolutionary relationships.

"When biologists talk of the evolution wars they usually mean the ongoing battle for supremacy in American schoolrooms between Darwinists and their creationist opponents. But the phrase could also be applied to a debate that is raging within systematics. On one side stand traditionalists who have built evolutionary trees from decades of work on species' morphological characteristics. On the other lie molecular systematists, who are convinced that comparisons of DNA and other biological molecules are the best way to unravel the secrets of evolutionary history."

"But these attempts at synthesizing molecules and morphology have not yet succeeded in closing the gulf that divides the two camps. At one extreme, molecular biologist Graur rejects any approach that offers an olive branch to the morphologists: "If something is right, why dilute it with something that is wrong?" On the other side, many morphologists remain deeply suspicious of total evidence, seeing it as a means of constructing phylogenies which pay no more than lip service to morphology."

Harris EE. Hey J. X chromosome evidence for ancient human histories. *Proceedings for the National Academy of Science*. 96:3320-24. 1999.

This study is in conflict with various mtDNA genetic studies that show that Neanderthal man and human are not related and that human evolved according to an out of Africa theory. It also shows that the genetic studies begin with the assumption that humans have evolved from a common ancestor of the chimpanzees.

Abstract—"...in conflict with...mitochondrial data..."

"According to African origins models, modern humans are posited to have originated in a subpopulation of archaic hominids in sub-Saharan Africa, with the location of this subpopulation undetermined. However, transitional fossils that display near modern characteristics have been found in widely disparate regions within Africa, including South Africa, East Africa, as well as North Africa, leaving the possibility that the ancestral population covered a wide geographic area."

"To estimate the time to the most recent common ancestral PDHA1 sequence, we assumed a chimpanzee/human speciation time of 5 million years before present (Myr BP)."

Conclusion—"Apart from the fixed difference and the low variation among non-Africans, the PDHA1 data are consistent with other studies of X chromosomal and autosomal genes that show an abundance of highly polymorphic and thus fairly ancient variation. These DNA sequence results do not suggest an expanding human population and thus are in conflict with mitochondrial DNA patterns and recent reports on microsatellite variation....It must be emphasized that present day genetic interpretations of historical demographic processes cannot discern the location or the proximity of historical populations."

Kahn P. Gibbons A. DNA from an extinct human. *Science*. 277:176-178, 1997.

"Worst, it's tough to distinguish DNA intrinsic to an ancient sample from the modern DNA that unavoidably contaminates it—the source of many false claims in the past. Ancient human samples are especially tricky, because their sequences might not differ much from that of contaminating modern human DNA, so it's hard to get a believable result."

Krings M. Stone A. Schmitz RW. Krainitzki H. Stoneking M. Paabo S. Neanderthal DNA sequences and the origin of modern humans. *Cell*. 90:19-30. 1997.

Ovchinnikov IV. Gotherstrom A. *et al.* Molecular analysis of Neanderthal DNA from the northern Caucasus. *Nature*. 404:490-493. 2000.

Krings M. Capelli C. *et al.* A view of Neanderthal genetic diversity. *Nature Genetics*. 26:144-146. 2000.

The three studies listed above claimed the mitochondrial DNA (mtDNA) of modern man and Neanderthal man is not similar. Notice the following quotes:

Krings 1997—"The Neanderthal mtDNA sequence thus supports a scenario in which modern humans arose recently in Africa as a distinct species and replaced Neanderthals with little or no interbreeding."

Ovchinnikov 2000 Abstract—"Phylogenetic analysis places the two Neanderthals from the Caucasus and western Germany together in a clade that is distinct from modern humans, suggesting that their mtDNA types have not contributed to the modern human mtDNA pool. Comparison with modern populations provides no evidence for the multiregional hypothesis of modern human evolution."

Krings 2002—"Although more extensive sampling of Neanderthals is obviously desirable, the current sequences indicate that the diversity of Neanderthals was restricted. Thus, it is highly unlikely that a Neanderthal mtDNA lineage will be found that is sufficiently divergent to represent an ancestral lineage of modern European mtDNAs."

Some scientists consider Neanderthal an evolutionary dead end and not in man's ancestral lineage since he was more powerful and bigger brained. These studies listed above do not properly understand how mtDNA is related to ancestry. The first study Krings 1997 has many technical and statistical problems ([Lubenow 1998](#)). In reality when properly interpreted these studies shows that human and Neanderthals actually genetically overlapped.

There is much fossil and genetic evidence that indicates that Neanderthal man and *Homo sapiens* interbred. The mtDNA evidence is hotly debated among evolutionary anthropologists. For some refutations of the theory that Neanderthals are not in modern man's lineage see the following: [Adcock 2001](#), [Duarte 1999](#), [Fraye 1993](#), and [Relethford 2002](#).

Lindahl T. Instability and decay of the primary structure of DNA. *Nature*. 362:709-715. 1993.

This paper explains that DNA material breaks down quite rapidly if the repair processes are interrupted. At the death of the organism these repair mechanisms no longer function and DNA is broken up into non-recognizable molecules by oxidation, radiation, and other metabolic factors.

"A problem with the hypersensitive PCR techniques, as encountered by most newcomers to the method, is that trace amounts of contaminating DNA accidentally derived from laboratory glassware, or even the experimenter, readily produce false-positive results. This is a particularly difficult problem in work with ancient DNA, which is often highly degraded or possibly non-existent in available specimens and the occasional dramatic 'success' in this area should be viewed with skepticism. From the data on hydrolytic and oxidative decomposition reviewed above, it can be predicted that deprived of the repair mechanisms provided in living cells, fully hydrated DNA is spontaneously degraded to short fragments over a time period of several thousand years at moderate temperatures."

Commenting on another research article in which 20 million year old plant DNA was recovered (the study can not be reproduced) the author says the following: "The apparent observation that fully hydrated plant DNA might be retained in high-molecular mass form for 20 million years is incompatible with the known properties of the chemical structure of DNA; it is, therefore...incredible..."

Lindahl T. Recovery of antediluvian DNA. *Nature*. 365:700. 1993.

"The oldest DNA fragments amplified with certainty by PCR (polymerase chain reaction) are 20,000—40,000 years of age. Beyond this point, time-dependent chemical decay of DNA structure make successful retrieval difficult...A major problem with attempt to retrieve very old DNA is the risk of contamination with traces of contemporary DNA."

Lubenow M. Recovery of Neandertal mtDNA: an evaluation. *Creation Ex Nihilo Technical Journal*. 12:1:87-98. 1998.

A response to the article appearing in [Cell 90:19-30, 1997](#). This article shows the fallacy of using mtDNA as a dating procedure. Shows the cultural context of Neanderthal man and how he relates to the fossil record and Genesis.

Nicholson GJ. Tomiuk J. *et al.* Detection of bone glue treatment as a major source of contamination in ancient DNA Analyses. *American Journal of Physical Anthropology*. 118:117-120. 2002.

Showing how bone glue and other material used in the conservation of museum and fossil samples contaminates DNA studies with extraneous DNA. Many of the vintage glues are contaminated with blood and human material, which will affect the amplification of the archaic DNA.

"The vast majority of ancient DNA analyses employ the polymerase chain reaction (PCR). While the enormous sensitivity of the method allows the amplification of minute amounts of authentic ancient DNA, even traces of contaminating nonauthentic DNA will inevitably lead to artifacts. Consequently, numerous control experiments are required to verify PCR-based results in ancient DNA analyses. Contaminating nucleic acids may stem from various sources. These include human DNA, derived from the persons performing the genetic experiments or from people

who previously handled the specimen, and from edaphon DNA, primarily derived from bacterial or fungal growth. Another source of contamination is seen in the numerous substances used for hard-tissue conservation. From the early 19th century up to the present, gelatine-based glue has been widely used, because it is cheap, easily available, and very effective. Although some authors have expressed suspicions that such conservation techniques may cause severe complications if not hindrance for the analysis of old biomolecules, this source of experimental pitfalls is underestimated."

"Control experiments performed to prove the authenticity of the obtained data must take into account that glue may contaminate the sample with DNA from a variety of species, including humans."

Parsons TJ. *et al.*, A high observed substitution rate in the human mitochondrial DNA control region. *Nature Genetics*. 15:363-7. 1997.

All evolutionary genetic studies are based on the mutational rate. This article highlights the fact that mutational rates and hence the evolutionary dates ([Gibbons 1998](#)) based on genetic studies is not consistent.

"The observed substitution rate reported here is very high compared to rates inferred from evolutionary studies. A wide range of CR substitution rates have been derived from phylogenetic studies, spanning roughly 0.025—0.26/site/Myr, including confidence intervals. A study yielding one of the faster estimates gave the substitution rate of the CR hypervariable regions as 0.118 ± 0.031 /site/Myr. Assuming a generation time of 20 years, this corresponds to $\approx 1/600$ generations and an age for the mtDNA MRCA (most recent common ancestor) of 133,000 y.a. Thus, our observation of the substitution rate, 2.5/site/Myr, is roughly 20-fold higher than would be predicted from phylogenetic analyses. Using our empirical rate to calibrate the mtDNA molecular clock would result in a age of the mtDNA MRCA of only 6,000 y.a., clearly incompatible with known age of modern humans."

Relethford JH. Absence of Regional affinities of Neanderthal DNA with living humans does not reject multiregional evolution. *American Journal of Physical Anthropology*. 115:95-98. 2002.

"While the average number of sequence differences between Neandertals and living humans exceeds the amount found within humans or *within* chimpanzee subspecies, it is less than the number of differences found *between* 2 out of 3 chimpanzee subspecies comparisons."

"The Lake Mungo sequence provides an example of the extinction of an mtDNA sequence over time, and it is possible that the same type of lineage extinction took place in the Neandertals."

"To date, the analyses performed on three Neandertal specimens all find Neandertal mtDNA to be roughly equidistant from living humans in Africa, Asia, and Europe. The observed data agree with the predictions of the African replacement model. However, this agreement constitutes proof only if the same predictions do not also apply to multiregional evolution models."

"Comparison of the Feldhofer sequence with living humans showed average differences less than found in 2 out of 3 comparisons of chimpanzee subspecies. Given this finding and the fact that the Neandertal-living human comparison spanned tens of thousands of years (thus generating more variation than expected at a single point in time), it seems possible that Neandertals were not a separate species, although they might be considered a different subspecies, as long suggested by a number of paleoanthropologists. In either case, the answer to the Neandertal question cannot be made based on regional comparisons of mitochondrial DNA across time, since both replacement and multiregional models can generate the same expected outcome... Therefore, the observed lack

of regional affinity cannot prove one model of modern human origins to the exclusion of the other."

Rhode DLT. Olson S. Chang JT. Modelling the recent common ancestry of all living humans. *Nature*. 431:562-66. 2004.

This statistical study reveals that the most recent common ancestor (MRCA) of all humans could have lived in the relatively recent past. Two different types of models were used. The first with infrequent migrations showed the MCRA as existing about 300 BC and the identical ancestor (IA), the break point of total or no ancestry, was about 3000 BC. The second, which allowed for a 5% migration rate, placed the MCRA at about 1415 BC and the IA at about 5353 BC. Both of these figures are startlingly recent. In other words there is statistical evidence that humanity could have descended from one pair of ancestors as recently as a few thousand years ago.

"These estimates would suggest, with the exchange of just one pair of migrants per generation between large panmictic populations of realistic size, that the MRCA appears in about the year 300 BC, and all modern individuals have identical ancestors by about 3,000 BC...With 5% of individuals migrating out of their home town, 0.05% migrating out of their home country, and 95% of port users born in the country from which the port emanates, the simulations produce a mean MRCA date of 1,415 BC and a mean IA date of 5,353 BC."

"But to the extent that ancestry is considered in genealogical rather than genetic terms, our findings suggest a remarkable proposition: no matter the languages we speak or the colour of our skin, we share ancestors who planted rice on the banks of the Yangtze, who first domesticated horses on the steppes of the Ukraine, who hunted giant sloths in the forests of North and South America, and who laboured to build the Great Pyramid of Khufu."

Serre D. *et al.* No evidence of Neanderthal mtDNA contribution to early modern humans. *PLOS biology*. 2:3:313-17. 2004.

Neanderthal mtDNA contains genetic sequences that are different from modern human mtDNA sequences. This is taken as evidence that Neanderthals and modern human are not related and therefore Neanderthals are placed in a different species category. This articles shows that this could be caused by factors that have nothing to do with the popular view that Neanderthals and humans are not related. Therefore placing Neanderthals in a different species level may be incorrect.

Abstract—"The retrieval of mitochondrial DNA (mtDNA) sequences from four Neandertal fossils from Germany, Russia, and Croatia has demonstrated that these individuals carried closely related mtDNAs that are not found among current humans. However, these results do not definitively resolve the question of a possible Neandertal contribution to the gene pool of modern humans since such a contribution might have been erased by genetic drift or by the continuous influx of modern human DNA into the Neandertal gene pool. A further concern is that if some Neandertals carried mtDNA sequences similar to contemporaneous humans, such sequences may be erroneously regarded as modern contaminations when retrieved from fossils."

"A related problem is that if a Neandertal fossil yields modern human-like DNA sequences, those might be discarded as putative contaminations, even if they may be endogenous and represent evidence for a close genetic relationship or interbreeding between the two groups."

Stedman HH. *et al.*, Myosin gene mutation correlates with anatomical changes in the human lineage. *Nature*. 428:415-418. 2004.

This study purports to show how a mutation in the chewing muscle of ancient primates such as Australopithecus and Paranthropus led to a reduce jaw/chewing muscles. This mutation then allowed the crania of the Homo line to become more rounded and less primate-like. This study is based on guesses and suppositions. It is a good example on how evolutionary dogma can be created and supported by the flimsiest of examples.

"Our findings on the age of the inactivating mutation in the MYH16 gene raise the intriguing possibility that the decrement in masticatory muscle size removed an evolutionary constraint on encephalization, as suggested by the anatomy of the muscle attachments relative to the sutures."

Templeton AR. Human Origins and analysis of Mitochondrial DNA sequences. *Science (Technical Comments)*. 255:737-39. 1992.

Outlining technical problems with the out of Africa DNA studies. Author states that the problem is based on genetic tree (cladograms) problems.

Templeton AR. The "Eve" hypotheses: a genetic critique and reanalysis. *American Anthropologist*. 95:1:51-72. 1993.

This paper gives a good overview of the problems with the mitochondrial eve theory. The following are just a few excerpts:

"All that can be said at this point is that more-parsimonious alternatives to the cladogram given by Vigilant et al. (1991) exist that do not support the Eve hypothesis."

"Hence there is not geographical resolution with the DNA sequence data either."

"The statistical tests used to infer an African root are inappropriate, and when appropriate tests are used there is no statistically significant support for an African origin with any mtDNA data."

"Hence, the geographical associations of mtDNA are statistically significantly incompatible with the out-of-Africa replacement hypothesis and instead strongly and clearly indicate that all Old World human populations were in genetic contact with one another throughout the entire time period marked by the coalescence of mtDNA."

"In summary, the out-of-Africa replacement hypothesis is rejected by the properties of the mtDNA cladogram itself. Instead, the mtDNA data are consistent with a model of restricted but recurrent gene flow throughout the entire time period marked by the time to coalescence with a recent overlay of geographically restricted population-expansion events. The out-of-Africa replacement hypothesis is also incompatible with the overall pattern that emerges from the nuclear DNA data series. The nuclear DNA pattern only clearly offers support for restricted gene flow among Old World human populations."

"Mitochondrial DNA contains much information about recent human evolution, but the picture that emerges from the detailed statistical analysis of geographical distribution presented in this article is much different that the out-of-Africa replacement hypothesis. "

Thomson R. Pritchard JK. *et al.* Recent common ancestry of human Y chromosomes: evidence from DNA sequence data. *Proceedings of the National Academy of Sciences*. 97:7360-65. 2000.

This DNA study of the Y chromosome is in conflict with the mitochondrial DNA "out of Africa" Eve theory. It gives a very young date of 50,000 years as compared to other studies, which give dates of 143,000–1,860,000 years before the present.

Abstract—"Although the geographic structure of the inferred haplotype tree is reminiscent of that obtained for other loci (the root is in Africa, and most of the oldest non-African lineages are Asian), the expected time to the most recent common ancestor is remarkably short, on the order of 50,000 years."

"From the Y chromosome, one would conclude that the ancestral population size 50,000 years ago was very small indeed. Yet this view is at odds with the results from other loci such as b-globin, which have very ancient MRCA (most recent common ancestor) times."

Throne A. Not out of Africa. Discover Magazine. 23:8. August 2002.

"Throughout Australia, anthropologists had found only big-browed, thick-skulled fossils. That made Mungo Lady a puzzle."

"Thorne preaches a revolutionary view called regional continuity. He believes that the species his opponents insist on calling *Homo erectus* was in fact *Homo sapiens*, and that they migrated out of Africa almost 2 million years ago and dispersed throughout Europe and Asia. As he sees it, there was no later migration and replacement: 'Only one species of human has ever left Africa, and that is us.'"

"Why does this matter? Because if Thorne and his camp are right, much of what we think we know about human evolution is wrong. In the world according to Thorne, the human family tree is not divided into discrete species such as *Homo erectus*, *Homo antecessor*, *Homo heidelbergensis*, and *Homo neanderthalensis*. They are all *Homo sapiens*. Yes, Thorne agrees, from the outside all these hominids look different from each other, but so do humans today— a Korean, a Nigerian, and a Dane hardly resemble each other. Our ancestors displayed great variety, but they were similar in the only way that mattered: They were the same species, which meant they could have sex with each other and produce fertile offspring."

"After the dating, Gregory Adcock, ([Adcock 2001](#)) a doctoral student in genetics at Australian National University, decided to check all 13 fossils for mtDNA... The results were nothing less than remarkable...Mungo Man also appeared to mock the findings of previous scientists: His mtDNA signature did not match anyone's, living or fossil, on Earth. There was no evidence that he was genetically related to ancient Africans...Mungo Man and his alternative complement of genes were alive enough to make it to Australia and contribute to the peopling of a continent. Modern Aborigines didn't inherit Mungo Man's mtDNA, but they have certainly inherited the characteristics of his skull. 'Eventually, all these people intermingled, and that's why the Aborigines have such diversity,' he says."

Trinkaus E. Ruff CB. Churchill SE. Vandermeersch B. Locomotion and body proportions of the Saint-Cesaire 1 Chatelperronian Neandertal. Proceeding of the National Academy of Science. 95:5836-40. 1998.

The Saint-Cesaire Neandertal has been dated to between 31-34,000 years old. It is a very modern example of a Neandertal. If the mitochondrial DNA studies that have been done on Neandertals are correct then we should not have such modern Neandertals associated with modern *H. sapiens*. This paper shows that modern humans and Neandertals coexisted at the same time. Implications are that they interbred. This would mix the Neandertal and modern human genes and invalidate the supposition that Neandertals and modern humans were separate species.

Vigilant L. Stoneking M. *et al.* African populations and the evolution of human mitochondrial DNA. *Science*. 243:1503-1507. 1991.

In order for genetic anthropologists to do DNA studies they must know what made-up ancestral human DNA. Since no one was around millions of years ago how do they know what this million year old DNA looked like? According to evolutionists since we have evolved from the primates then the DNA must be similar to primate DNA, so they use chimpanzee DNA as their starting point. This is circular reasoning and is not scientific! Notice the following quote:

"An estimate of the rate of sequence divergence of the hypervariable segments of the mtDNA control region was obtained by comparing the average amount of sequence difference between humans and chimpanzee."

Wieland C. A shrinking date for 'Eve.' *Creation Ex Nihilo Technical Journal*. 12:1:1-3. 1998.

Showing the problems with the commonly accepted out of Africa "mitochondrial Eve" theory.

Wilson AC. Cann RL. The recent African genesis of humans. *Scientific American*. 68-73. April 1992.

"Genetic studies reveal that an African woman of 200,000 years ago was our common ancestor."

Wolpoff M. Thorne A. The case against Eve: where did we originate? *New Scientist*. 30:1774:37. June 22, 1991.

" For much of this century anthropologists have been locked in debate over one of evolution's best kept secrets: where exactly did modern humans, *Homo sapiens*, originate?...anthropologists remain divided over the theory. Some consider a migration of conquering humans from Africa to be at odds with the fossil record. They feel that the evidence of 'molecular anthropology', as the genetic approach is dubbed, has been wrongly interpreted, and argue that fossils are a much more direct guide to human evolution than DNA."

"So who is right? Did Eve really exist, or is she an illusion, the result of reading too much into genes perhaps?"

"Also, any attempt to base a genealogy on mitochondria runs into a fundamental problem: mitochondria are inherited only through the female line, so if a woman has no daughters, her mitochondria are at an evolutionary dead end. Consider the following analogy. Imagine trying to reconstruct family histories in a population whose women take their husband's name when they marry. (Families without sons are now the losers, but the principle is the same.) If anthropologists encountered a migrant neighbourhood in a large city and found that many of the families shared just a few surnames, they might assume that a small number of highly successful families had replaced their less successful neighbours. But another explanation is that many families came to the city and mixed with their neighbours, and that over the years, names were increasingly lost to families who had only daughters - until just a few names were left. Those names can indeed be traced back to just a few of the founding families, but each individual carries a selection of genes from many families."

Anomalous Fossils and Artifacts

Behrensmeyer AK. Laporte LF. Footprints of a Pleistocene hominid in northern Kenya. *Nature* 289:169. 1981.

Very modern footprints found in 1.6 million year old strata. This shows that modern man was walking on the earth long before *H. sapiens* were supposed to exist. This proves that modern man was a contemporary of all the supposed fossil men. These fossil men are actually all variations of man. Another fossil ancestor of man, *Australopithecus*, was simply an extinct ape.

Garcia-Bellido DC. Collins DH. Moulting arthropod caught in the act. *Nature*. 429:40. 2004.

The phylum arthropods include the insects (class Insecta) and the crustaceans (class Crustacea). The animals in the phylum arthropoda all moult or shed their exoskeleton as they grow. This is a very complicated and intensive procedure. A 505-million year old fossil arthropod named *Marrella splendens*, was fossilized in the act of moulting. This indicates that the act of moulting existed at this early time period and that the arthropods that existed at this time were complex organisms.

"Until now, the existence of ecdysis (moulting) in early arthropod has been based solely on inference. Here we describe a 505-million-year-old specimen of the Cambrian soft-bodied arthropod *Marrella splendens* that has been visibly preserved in the middle of the act of moulting. This specimen confirms that early arthropods moulted during growth, just as they do today...preserved in the act of moulting 505 million years ago, confirms that ecdysis was occurring early in arthropod evolution."

Gore R. The first Europeans—The dawn of humans. *National Geographic*. pp. 96-113. July 1997.

This article details many examples of tools and culture existing at time older than anticipated. Examples include javelins from Schöningen Germany, symbolic markings on a piece of elephant bone. Also details from the *Homo erectus* site in Bilzingsleben in Eastern Germany are revealed. These findings include stone tools, butchery marks, campsites, a large paved area, and what may have been human sacrificial rituals conducted on a large stone anvil centered between the horns of a huge bison. These have been all dated to the period of 400k years ago.

Henshilwood C. d'Errico F. *et al.*, Middle Stone Age shell beads from South Africa. *Science*. 304:404. 2004.

Middle Stone Age shell beads dated to 77,000 years ago have been excavated in South Africa. This is evidence of the oldest man made symbolic artifact discovered to date in the African continent. This implies that man had a symbolic nature and that in all probability speech was well developed by this time. Also because of the wear patterns clothing or other type of thread like material was in use at this time.

"Here we report on 41 perforated tick shells (*Nassarius kraussianus*) beads (Fig 1) recovered from the Middle Stone Age (MSA) levels at Blombos Cave...age of 77 ± 6 ka. Of the MSA tick shell, 88% are dorsally perforated near the lip. This type of perforation is absent in living populations...Microscopic analysis of the MSA shells reveals a use-wear pattern, absent on natural shells, consisting of facets that flatten the outer lip or create a concave surface on the lip close to the anterior canal. This use-wear pattern is consistent with friction from rubbing against thread, clothes or other beads and is the principal factor that defines the MSA shells as beads.

Microscopic residues of ocher detected inside the shells suggest that either the material in contact with the beads or the beads themselves were colored red."

"MSA shells are found in clusters of 2 to 17 beads, with each group clustering in the same or neighboring 50-by-50-cm quadrates. Within a group, shells display a similar size, shade, use-wear pattern, and perforation size. Each cluster represents beads coming from the same beadwork item...In human societies, beads have many different function, all eminently symbolic. Fully syntactical language is arguably an essential requisite to share and transmit the symbolic meaning of bead works..."

Hlusko LJ. The oldest hominid habit? experimental evidence for toothpicking with grass stalks. *Current Anthropology*. 44:5:738-41. 2003.

This article shows that *Homo erectus*, *Homo neanderthalensis*, and *Homo sapiens* all had the habit of flossing and picking their teeth with grass stalks, this left grooves in their teeth. No other living organisms except humans pick their teeth. This reveals the humanity of the early fossil men.

"These grooves appear mostly on the root...of some premolars and molars from members of the genus *Homo*, including *H. erectus*, *H. neanderthalensis*, and *H. sapiens*...Interproximal wear grooves have been recognized for almost a century, and different ideas have been put forth to explain them...the use of toothpicks by hominids is potentially one of the most persistent behaviors visible in the archaeological records...interproximal wear grooves represent the earliest evidence of any hominid habit.

These experimental replications demonstrate that grass-stalks segments used as toothpicks are capable of creating interproximal wear grooves identical to those found in the hominid fossil record. Therefore toothpicking with grass stalks probably represents the most persistent habit documented in human evolution."

Howells WW. *Homo erectus* in human descent: ideas and problems. Sigmon BA, Cybulski JS, eds. *Homo erectus Papers in Honor of Davidson Black*. p. 79-80. University of Toronto Press. Toronto. 1981.

"The humeral fragment from Kanapoi, with a date of about 4.4 million, could not be distinguished from *Homo sapiens* morphologically or by multivariate analysis by Patterson and myself in 1967 (or by much more searching analysis by others since then). We suggested that it might represent *Australopithecus* because at that time allocation to *Homo* seemed preposterous, although it would be the correct one without the time element."

This quote shows that evolutionary dating and philosophy has precedence over morphology and shape.

Johanson, Donald & Maitland Edey. *Lucy the Beginning of Humankind*. Simon and Schuster. New York, NY. 1981.

Interesting comments on the 4.5 million year old Laetoli footprints p.250. Describes these footprints as identical to modern footprint and says that even a four year old would describe them as modern.

Kusserow A. *et al.* Unexpected complexity of the *Wnt* gene family in a sea. *Nature*. 433:156-160. 2005.

The sea anemone *Nematostella vectensis* is considered by evolutionist to be a member of the primary basal group, the cnidarians a metazoan, from which many organisms evolved. Interestingly when its genetic material was examined it was found to be very complex. It is more complex than some organisms that have evolved from it. This is the reverse of what is expected.

"Our result also points to an unexpected paradox of genome evolution: the gene diversity in the genomes of simple metazoans is much higher than previously predicted and some derived lineages (flies and nematodes) have an even lower diversity of gene family members. Thus there is no simple relationship between genetic and morphological complexity."

Leakey MD. Footprints in the Ashes of Time. National Geographic. April 1979.

Description of the Laetoli footprints, dated to 4.6 Mya. Experts in the article describe them as essentially modern looking (see also [Johanson 1981](#)).

Leakey MD. Primitive artefacts from Kanapoi valley. Nature 212:579-81. 1966.

A description of various stone tools is given. These include stone choppers, which were originally thought to be quite old. They have now been dated to a recent age. Note the following quote: "...the occurrence of an industry restricted to heavy duty tools of Lower Palaeolithic facies associated with pottery and hut circles, is an anomaly hard to explain. It may be noted, however, that a crude form of stone chopper is used in the present time by the more remote Turkana tribesmen in order to break open the nuts of the doum palm."

Leakey LSB. Adventures in the Search for Man. National Geographic. January 1963.

Leakey discovered the world's oldest living structure. A stone structure in the form of a semicircle dated to more than two million years. This structure was attributed to *Australopithecus*, in the article, since supposedly that was the only kind of fossil man that could have made them. Since then it has been discovered that two modern day African tribes make the identical structure to use as a windbreak. This shows that modern man was alive and well more than two million years ago according to evolutionary reckoning.

Leakey REF. Evidence for an advanced plio-Pleistocene hominid from East Rudolf Kenya. Nature. 242:447-50. 1973.

Describes the KNM-ER 1470 fossil crania and other related bones. Leakey attributes an age of 2.9 My to the crania based on the work of Fitch and Miller ([Fitch 1970](#)). Since this fossil is so modern looking this set off a debate in the scientific community (see section on [radiometric dating](#)). This debate involved the dating and re-dating of this find. Various dates have been assigned to it ranging from 1.8-2.9 My. All the dates given have been hailed as the correct one by the suppliers. Other bones were found with the find. They are very modern looking and Leakey states such in the article. They have been described as follows:

"When the femur is compared with a restricted sample of modern African bones, there are marked similarities in those morphological features that are widely considered characteristic of modern *H. sapiens*. The fragments of tibia and fibula also resemble *H. sapiens*...The postcranial elements cannot readily be distinguished from *H. sapiens* if one considers the range of variation known for this species."

Lowe DR. Byerly GR. Ironstone pods in the Archean Barberton greenstone belt, South Africa: Earth's oldest seafloor hydrothermal vents reinterpreted as Quaternary subaerial springs. *Geology*. 31:10:909-12. 2003.

Ironstone pods, which occur on the surface of the earth, are supposedly left over deposits from hydrothermal vents that were once located deep under the ocean surface. Life, according to evolutionary scientists, evolved around these hydrothermal vents. These vents have been dated to 3.5 billion years ago. In reality after further investigation it was discovered that these ironstone pods may only be a few thousand years old (≈ 100 K) and were deposited by freshwater surface springs.

Abstract—"Bodies of iron oxide to 200 m across in the 3.5-3.2 Ga (Ga = billions of years ago) Barberton greenstone belt, South Africa, have been interpreted as deposit of Archean seafloor hydrothermal vents and have provided what are arguably key observations about surface environments on early Earth."

"We have found that the classic ironstone pod of de Wit et al. and de Ronde et al. are part of a family of ironstone features that occur across much of the southern part of the Barberton belt. We summarize evidence that the ironstone formed through young—Cenozoic and probably Quaternary—groundwater and/or low-temperature hydrothermal activity...Collectively, the composition, structure and geologic relationships of the ironstone pods indicate that they are not Archean features but bodes that formed in relatively recent time...The potential age range of ironstone deposition is poorly constrained. The presence of a modern goethite spring terrace suggest that activity extended to essentially the present day, and extensive ironstone deposition associated with relatively fresh landslides suggest activity during wetter parts of the Pleistocene."

Conclusions—"Hydrothermal systems may have played an important role in early terrestrial biological and environmental evolution, but ironstone pods in the Barberton greenstone belt are not Archean in age and provide no information about early surface environments, ocean compositions, or biological communities."

McHenry H. Fossils and the mosaic nature of human evolution. *Science*. 190:425-431. 1975.

A 4.5 million year old humerus (arm bone) that is identical to the modern counterpart. "The evidence shows that the Kanapoi specimen, which is 4-4.5 million years old is indistinguishable from modern *Homo sapiens*..."

Patterson B. Howells WW. Hominid humeral fragment from early Pleistocene of Northwestern Kenya. *Science*. 156:64-66. 1967.

A study using "computer discriminate," was undertaken on the 4.5 million year old Kanapoi fossil humerus and was found to differ from chimpanzee and Paranthropus, but was identical to the mean of modern man.

Stuart AJ. *et al.* Pleistocene to Holocene extinction dynamics in giant deer and woolly mammoth. *Nature*. 431:684-689. 2004.

This paper traces the extinction of the giant deer commonly known as the Irish elk. The Irish elk was a large bodied mammal with a antler spread of more than 11 feet. This paper supports the conclusion that the large bodied animals were not a separate species but were environmentally produced. When the environment changes post flood the size of the mammals decreased (for a similar article about woolly mammoths see [Vartanyan 1993, 1995](#)).

Abstract—"The extinction of the many well-known large mammals (megafauna) of the Late Pleistocene epoch has usually been attributed to 'overkill' by human hunters, climatic/vegetational changes or to a combination of both. An accurate knowledge of the geography and chronology of these extinctions is crucial for testing these hypotheses. Previous assumptions that the megafauna of northern Eurasia had disappeared by the Pleistocene/ Holocene transition were first challenged a decade ago by the discovery that the latest woolly mammoths on Wrangel Island, northeastern Siberia, were contemporaneous with ancient Egyptian civilization. Here we show that another spectacular megafaunal species, the giant deer or 'Irish elk', survived to around 6,900 radiocarbon yr BP (about 7,700 yr ago) in western Siberia— more than three millennia later than its previously accepted terminal date—and therefore, that the reasons for its demise are to be sought in Holocene not Pleistocene events. Before their extinction, both giant deer and woolly mammoth underwent dramatic shifts in distribution, driven largely by climatic/vegetational changes. Their differing responses reflect major differences in ecology."

Thieme H. Lower Palaeolithic hunting spears from Germany. *Nature*. 385:807-810. 1997.

This article describes javelins/spears that are 400,000 years old. *Homo erectus* would have had to make these since this is before the time of Neanderthal man or archaic *Homo sapiens*.

Abstract—"Here I describe some wooden throwing spears about 400,000 years old that were discovered in 1995 at the Pleistocene site at Schoningen, Germany. They are thought to be the oldest complete hunting weapons so far discovered to have been used by humans. Found in association with stone tools and the butchered remains of more than ten horses, the spears strongly suggest that systematic hunting, involving foresight planning and the use of appropriate technology, was part of the behavioral repertoire of pre-modern hominids. The use of sophisticated spears as early as the Middle Pleistocene may mean that many current theories of early human behavior and culture must be revised."

"In all of these respect they resemble modern javelins, and were made as projectile weapons rather than thrusting spears or lances...Their age can be estimated as probably 400 kyr...The discovery of spears designed for throwing means that theories of the development of hunting capacities and subsistence strategies of Middle Pleistocene hominid must be revised, as well balanced, sophisticated hunting weapons were common from an early period of the Middle Pleistocene onwards."

Vartanyan SL. *et al.* Holocene dwarf mammoths from Wrangel Island in the Siberian Arctic. *Nature*. 362. 337-340. 1993.

Vartanyan SL. *et al.* Radiocarbon dating evidence for mammoths on Wrangel Island, Arctic Ocean, until 2000 BC. *Radiocarbon*. 37:1:1-6. 1995.

These two studies show that a sub-species of dwarf woolly mammoths (*Mammuthus primigenius*) existed on Wrangel Island. Wrangel Island is located 500 miles north of the Bearing Sea between Alaska and Northeast Russia in the Chukchi Sea. Some of these remains have been dated to as recently as 2000 BC. This would mean that these mammoths were alive and well during the Egyptian dynasties. This also lends credence to the conclusion that the mammoths and other large bodied mammals were created by the environment and were not necessarily of different species (for a similar paper on the Irish elk see [Stuart 2004](#)).

Vartanyan 1993 Abstract—"The cause of extinction of the woolly mammoth, *Mammuthus primigenius* (Blumenbach), is still debated. A major environmental change at the Pleistocene–Holocene boundary, hunting by early man, or both together are among the main explanations that

have been suggested. But hardly anyone has doubted that mammoths had become extinct everywhere by around 9,500 years before present (BP). We report here new discoveries on Wrangel Island in the Arctic Ocean that force this view to be revised. Along with normal-sized mammoth fossils dating to the end of the Pleistocene, numerous teeth of dwarf mammoth dated 7,000–4,000 yr BP have been found there. The island is thought to have become separated from the mainland by 12,000 yr BP. Survival of a mammoth population may be explained by local topography and climatic features, which permitted relictual preservation of communities of steppe plants. We interpret the dwarfing of the Wrangel mammoths as a result of the insularity effect, combined with a response to the general trend towards unfavourable environment in the Holocene.

Vartanyan 1995—"During the last glacial maximum (*ca.* 20 ka ago), environmental conditions on Wrangel Island proved capable of sustaining habitation by mammoths. Our data show that woolly mammoths persisted on Wrangel Island in the mid-Holocene, from 7390-3730 yr ago. ^{14}C dating has shown that mammoths inhabited Wrangel Island for as long as 6000 yr after the estimated extinction of *Mammuthus primigenius* on the Siberian continent."

Radiometric Dating

Barton CE. Merrill RT. Barbetti M. Intensity of the Earth's magnetic field over the last 10 000 years. *Physics of the Earth and Planetary Interiors*. 20:96-110. 1979.

The variations in the Earth's magnetic field cause a corresponding change in the production of atmospheric ^{14}C and affect the radiocarbon dates. Data for ^{14}C dates past 8000 years before the present are very sketchy.

Bosch F. Faestermann T. *et al.* Observation of bound-state B^- decay of fully ionized ^{187}Re : ^{187}Re - ^{187}Os cosmochronometry. *Physical Review Letters*. 77:26:5190-93. 1996.

$^{187}\text{Rhenium}$ atoms through beta decay, disintegrates into $^{187}\text{Osmium}$, in a half-life of 42 billion years. When ^{187}Re atoms are ionized, that is they have no electrons in their orbitals their half-life is reduced to an amazing 32.9 years. This has implications for isotopes used in the various dating schemes. First ionization greatly reduces the half-life of the various dates based on beta decay if ionization is involved and secondly the disintegration rates are not immutable as previously thought ([Takahashi 1987](#)).

Brown RH. ^{14}C depth profiles as indicators of trends of climate and $^{14}\text{C}/^{12}\text{C}$ ratio. *Radiocarbon*. 28:2A:350-57. 1986.

This article reveals that the ^{14}C level of soil does not decrease steadily with depth as would be expected if the atmospheric ^{14}C had been constant in the past. On the contrary the ^{14}C levels decreases at a rapidly accelerating rate the deeper the strata. In other words the ^{14}C level in the past give fictitiously older dates than they should. The reason is an increase in atmospheric ^{12}C and/or an increasing rate of accumulating ^{12}C . An increase in the non-radioactive ^{12}C would lower the ratio of ^{14}C and give older ^{14}C dates.

"Therefore, within the scope of this investigation increasing $^{14}\text{C}/^{12}\text{C}$ ratio and/or increasing accumulation rate appear to be the dominant and only potentially adequate causes. "

Bucha V. Influence of the Earth's magnetic field on radiocarbon dating. Nobel Symposium 12th:1969:Uppsala Universitet. Wiley Interscience Division. New York. p. 501-511. 1970.

"New values for the changes of the earth's magnetic moment provide a basis for a study of the dependence of C14 production on the earth's magnetic field. The decrease of the magnetic moment is followed by an increase of the cosmic-ray flux and therefore by an increase in the production of C14. Higher values of the field have the opposite effect. Looking at Fig. 6, we see a good correlation between the radiocarbon deviation and the magnetic-moment changes. The increase of magnetic moment around A.D. 900 is immediately accompanied by the decrease of C14 deviations. The same is true of the changes around A.D. 1200, as well as for those between A.D. 1 and 700 B.C."

Burchuladze AA. Pagava AV. *et al.* Short-term variations of cosmogenic radiocarbon with solar activity. Proceeding of the 16th International Cosmic Ray Conference. University of Tokyo. Japan. MG3-1:200-5. 1979.

"It now seems established that there exist an anticorrelation between sunspot numbers and production of radiocarbon, at least for the solar cycle with the period of 80-90 years. It is believed that this effect is due to the modulation of galactic cosmic rays by solar wind...This would indicate about 25% variations of the radiocarbon production rate during the solar cycle 19."

Curtis GH. Drake T. Age of KBS tuff in Koobi Fora formation East Rudolf, Kenya. *Nature*. 258:395-48. 1975.

Re-dating of the strata skull KNM-ER1470 (see Homo erectus section [Leakey 1973](#)) was found in, gives a date of 1.82 Mya instead of 2.7 My.

Dalrymple GB. ⁴⁰Ar/³⁶Ar analysis of historic lava flows. *Earth and Planetary Science Letters*. 6:47-55. 1969.

26 historic lava flows were measured using the argon isotope method. One-third of them gave geologically unacceptable dates. Many of the samples that should have been only a few hundred years old gave dates of more than six magnitudes of error. Some gave "old dates" of more than one million years before the present. One of the possible sources of the error is the incorporation of argon into the rocks as they cool. In other words the potassium-argon system is not a closed system.

Dalrymple GB. Moore JG. Argon-40: excess in submarine pillow basalts from Kilauea Volcano, Hawaii. *Science*. 161:1132-1135. 1968.

Abstract—"Submarine pillow basalts from Kilauea Volcano contain excess radiogenic argon-40 and give anomalously high potassium-argon ages."

Data indicates that the basalt produced by the Kilauea Volcano is less than 1,000 years old. Argon dating gave ages ranging from 160,000 years to 42.9 millions years old.

Fitch FJ. Hooker PJ. Miller JA. ⁴⁰Ar/³⁹Ar dating of the KBS tuff in Koobi Fora formation, East Rudolf, Kenya. *Nature*. 263:740-744. 1976.

This study contradicts a previous study ([Curtis 1975](#)), which reconfirms the original date for KNM-ER 1470 at 2.42 Mya. This study and the study done previously both show that radiometric dates are subject to human bias!

Fitch FJ. Miller JA. Radioscopic age determinations of Lake Rudolf artefact site. *Nature*. 226:226-228. 1970.

The original dating of the strata in which KNM-ER 1470 was found. This article shows that the stratum was originally dated at 212-230 million years old. It was obviously not an acceptable date since it had *Homo* fossil remains in it. It was later redated to an acceptable 2.6 mya. KNM-ER 1470 was thus assigned a date of more than 2.9 mya since it was found below this strata. If no fossils had been uncovered in the strata the older date (212-230 my) would probably have been acceptable and would still be considered valid. This shows that the dating systems are fluid, are not absolute, and that they are not independent since fossils are deciding factors in whether dates are "good" or "bad." Later this date of 2.9 mya was considered too old and was reevaluated ([Curtis 1975](#)) and redated to about 1.8 mya. Thus the date for the stratum KNM-ER 1470 was found in was securely and scientifically date three times: once at 212-230 mya, then 2.6 mya and finally to 1.8 mya.

"Samples of a volcanic tuff and of pumice lumps in a calcareous matrix were sent to us by Mr. Richard Leakey in July 1969 for an age determination feasibility study...One of the most intractable of these is the possible presence of extraneous argon derived from inclusion of pre-existing rocks...The results of these age determinations are given in Table 1. From the results (212-230 my) it was clear that an extraneous argon age discrepancy was present, and that it would only be possible to date this tuff by careful extraction of undoubtedly juvenile components for analysis." (p. 226)

"It can therefore be concluded that the best interpretation of the results of three conventional K-Ar age determination and four $^{40}\text{Ar}/^{39}\text{Ar}$ age analysis on pumice, crystal and whole rock fraction of the tuff horizon in the Koobi For a beds from east of Lake Rudolf in East Africa is that its age is very close to 2.6 m.y. ($2.61 \pm$ less that 0.26)." (p. 228)

How are these different dates arrived at? The scientific investigator simply picks out the rock crystals that look too old and re-dates the sample. He simply manipulates the data until he gets a good date. Using this method any date can be derived.

Gladwin HS. Dendrochronology, radiocarbon and bristlecones. *Anthropological Journal of Canada*. 14:4:2-7. 1976.

A review of the many and varied problems associated with the correlation of ^{14}C and tree rings. Shows how the counting and the age determination as revealed by tree-rings are still subject to human interpretation. Also has an interesting section showing the attitude of some of the scientists doing the dendrochronology studies.

Jung M. Bosch K. *et al.* First observation of bound state β^- decay. *Physical Review Letters*. 69:15:2164-67. 1992.

This was the first instance of the measuring of bound state β^- decay. The authors report the decay of normally stable $^{163}\text{Dysprosium}$ into $^{163}\text{Holmium}$ in a measured half-life of 50 days. Accelerated radioactive decay had been predicted by Takahashi ([Takahashi 1987](#)).

Kappeler F. Beer H. Wisshak K. s-process nucleosynthesis—nuclear physics and the classical model. *Reports on Progress in Physics*. 52:945-1013. 1989.

In this report the half-life of $^{176}\text{Lutetium}$ is under high heat conditions and is theoretically reported to be 3.68 hours. Normally it has a half-life of more than 41 billion years ([Klay 1991](#)).

Klay N. *et al.* Nuclear structure of ^{176}Lu and its astrophysical consequences. *Physical Review C, Nuclear Physics*. C44:6:2847-2848. 1991.

The normal half-life of $^{176}\text{Lutetium}$ is 41 billion years. This paper reveals that at extremely high temperatures of 200-350 Million degrees Kelvin the half-life begins to shorten. At 600 MK the half-life is only an incredible 8 days. This is more than a 10 order of magnitude change in the half-life. This isotope is infrequently used in the various dating schemes. If at creation the elements were created in a superheated condition then the 41 billion year half-life of lutetium would have been condensed into a few days or weeks.

Krummenacher D. Isotopic composition of argon in modern surface volcanic rocks. *Earth and Planetary Science Letters*. 8:109-117. 1970.

Abstract—"A study of the $^{40}\text{Ar}/^{36}\text{Ar}$ and $^{38}\text{Ar}/^{36}\text{Ar}$ ratios in argon extracted from 27 modern surface volcanic rocks shows that fractionation, along with contamination by non-atmospheric argon inherited from the parent magma, is an important cause of anomalous $^{40}\text{Ar}/^{36}\text{Ar}$ ratios in these rocks."

Some of the samples which were a few years old gave argon dates of 32, 8.5, 2.4, and 22 million years. Other samples gave ages in the hundreds of thousands of years. This was attributed to argon leaking into the samples after they had cooled. This reveals that the samples are not closed systems and that incorrect dates are very common.

Labeyrie J. Delibrias G. Duplessy JC. The possible origin of natural carbon radioactivity fluctuations in the past. *Nobel Symposium 12th:1969:Uppsala Universitet*. Wiley Interscience Division. New York. p. 513-537. 1970.

Shows how radiocarbon variations can be affected by many factors including: climatic conditions, continental humus and organic matter, oceanic biomass, and solar activity, which affects cosmic ray intensity.

Lee RE. Radiocarbon: ages in error. *Anthropological Journal of Canada*. 19:3:9-29. 1981.

"It may come as a shock to some, but fewer than 50 percent of the radiocarbon dates from geological and archaeological samples in northeastern North America have been adopted as 'acceptable' by investigators. J. Ogden III."

Abstract—"Discusses problems that have made radiocarbon unreliable, from ancient carbon-14 levels and contamination to abuse of reported ages. Illustrates effect of a fault chronology in genuine knowledge, with Ernst Antevs as example. Drastic change in attitude essential, if radiocarbon to become a valid means of dating the past."

Lingenfelter RE. Ramaty R. Astrophysical and geophysical variations in C14 production. *Nobel Symposium 12th: 1969:Uppsala Universitet*. Wiley Interscience Division. New York. p. 513-537. 1970.

Abstract—"In the present paper we study time-dependent variations in the production rate of C14, resulting from changes in various astrophysical and geophysical factors. The general success of the C14 dating method implies that to a first approximation the production rate of C14 has been

essentially constant for the last several millennia. However, a variety of phenomena cause change in the production rate, which in turn may produce measurable perturbations in the biospheric C14 activity. In particular, we shall consider changes in C14 production caused by variations in the terrestrial and interplanetary magnetic fields, leading to changes in the flux of galactic cosmic rays at the earth, and by enhanced fluxes of particles produced by solar flares and by variations in the local interstellar cosmic-ray flux produced by nearby supernova explosions. We calculate the yields of C14 from the interaction of proton, alpha particles and high-energy gamma rays as functions of the incident energy. Using models of the modulation of the cosmic-ray spectrum by terrestrial and interplanetary magnetic fields and of the possible time variations of these fields, we then compute the resultant changes in C14 production. Similarly, from estimates of the rates of occurrences of the solar flares and supernovae and their particle and radiation-flux densities at the earth, we calculate the possible C14-production variations."

Lowe DC. Problems associated with the use of coal as a source of ^{14}C -free background material. *Radiocarbon*. 31:2:117-120. 1989.

According to geologic and evolutionary theory, coal is millions of years old and should therefore not have any ^{14}C incorporated in its structure. This article summarizes the problems with various types of coal containing measurable amounts of ^{14}C —something that is impossible if the dating systems are correct.

Merril RT. *The Earth's Magnetic Field: Its History, Origin, and Planetary Perspective*. Academic Press Inc. London. pp. 100-109. 1983.

Changes in the Earth's magnetic field will affect the production of ^{14}C . Page 109 contains a chart showing how the magnetic field and the ^{14}C production are interrelated.

Michael HN. Ralph EK. "Quickie" ^{14}C dates. *Radiocarbon*. 23:1:165-66. 1981.

Dendrochronology (tree-ring dating) of the bristlecone pine has been correlated with ^{14}C dates. The public is then assured that two independent branches of science have arrived at the same conclusion. Thus bolstering the confidence in both system. In reality many of the tree-rings are rough dated by ^{14}C then these dates are used to support ^{14}C dating system. This is circular reasoning which invalidates the dendrochronology/ ^{14}C dating systems.

"The extension of the bristlecone pine chronology, which is, thus far, the only complete tree-ring-dated series that extends beyond 6000 BC and which is used for the calibration of radiocarbon dates, has been going on over the past 22 years, that is, ever since Schulman established the extremely old ages for the bristlecone pine...Over the past seven years we, at the Radiocarbon Laboratory, University of Pennsylvania, have used the radiocarbon process to date quickly many of the samples (of bristlecone wood) picked up in the field just a few days before. The samples are sent by air mail from the White Mountains areas in California to the laboratory in Philadelphia. They are processed immediately and counted. About 275 samples have been dated during the past seven years."

Ogden JG. The use and abuse of radiocarbon dating. *Annals New York Academy of Science*. 288:167-173. 1977.

Reports on the statistical abuse of radiocarbon dates in published literature. Many scientists do not understand the statistical implication of the radiocarbon dates they receive from the laboratory after a sample is dated and returned.

Pavlov P. Svendsen JJ. Indrelid S. Human presence in the European Arctic nearly 40,000 years ago. *Nature*. 413:64-67. 2001.

This article gives a good overview of how carbon dating is used in the evolutionary mindset. Once dates are established then an evolutionary framework is built on the dating foundation.

Abstract—"The transition from the Middle to the Upper Palaeolithic, approximately 40,000-35,000 radiocarbon years ago, marks a turning point in the history of human evolution in Europe. Many changes in the archaeological and fossil record at this time have been associated with the appearance of anatomically modern humans. Before this transition, the Neanderthals roamed the continent, but their remains have not been found in the northernmost part of Eurasia... This is the oldest documented evidence for human presence at this high latitude; it implies that either the Neanderthals expanded much further north than previously thought or that modern humans were present in the Arctic only a few thousand years after their first appearance in Europe."

Saupe F. Strappa O. Coppens R. A possible source of error in ^{14}C dates: volcanic emanations (examples from the Monte Amiata District, Provinces of Grosseto and Siena, Italy). *Radiocarbon*. 22:2:525-31. 1980.

Wood grown in an area that is subject to volcanic emanations gave "old dates" for modern wooden timbers used in mining operations. The ages obtained by carbon dating were 5730 ± 100 years before the present. This was attributed to the production of large amounts of ^{12}C diluting the atmosphere

Abstract—"Wood from regular timbering of a shallow seated mine in Tuscany gave ^{14}C ages of 5730 ± 100 year BP, much too old to be attributed to one of the known civilizations of Italy. This mine is located in a region of declining volcanic activity, noticeable especially through numerous emanations (natural or incidentally induced by drillings). It was suspected that the analyzed wood had grown in an environment where the normal atmosphere had been diluted by volcanic emanations. To check this hypothesis, living plants (trees, bushes and reeds) and volcanic emanations have been sampled and their ^{14}C content measures. All present day plants are depleted in ^{14}C giving a fictitious age different from 0 (1805, 1820, 2540, 4350 years BP). Of the gaseous emanations sampled, two have a high pressure and show virtually no ^{14}C ($>41,000$ BP). Two others have pressure closes to atmospheric, and a small amount of ^{14}C was introduced by atmospheric contamination (22,570 and 30,580 years BP).

Snelling AA. Conflicting 'ages' of Tertiary basalt and contained fossilised wood, Crinum, Central Queensland, Australia. *CEN Technical Journal*. 14:2:99-122. 2000.

This article describes a drill core that was recovered while drilling a ventilation shaft for a coalmine. At a depth of 25 m the core brought up fossilized wood and basalt. Apparently the basalt from a volcanic eruption covered over a living tree. The tree and the basalt should be the same age. The samples were sent to two radiometric dating labs, each lab dated both the wood and the basalt samples. The basalt was dated to 36—48 million years old; the wood yielded a ^{14}C date of 35—47 thousand years old. If the wood was as old as the basalt it should have not given a valid ^{14}C date. These types of tests indicate that the dating systems are inherently incorrect.

"All the field evidence indicates that the wood was fossilised as a result of being entombed in the lowermost of these Tertiary alkali basalt flows at Crinum. The trees were apparently rooted in the Permian siltstone at the Tertiary land surface over which the lava flowed. Without doubt, the wood must be the same age as the basalt which entombed it. However, an apparent conflict arises because the fossilised wood contains radiocarbon which yields a ^{14}C 'age' of around 37,500 years BP, whereas the basalt has been labelled 'Tertiary' with a K-Ar 'age' of 47.5 Ma (the basalt in the

drill core enclosing the fossilised wood), though this latter 'result' should probably be around 30 Ma due to the inclusion of excess $^{40}\text{Ar}^*$ in the basalt. The reliability of K-Ar 'dating' is, of course, questioned, and the true age of the basalt based on radioisotopic dating remains unclear."

Snelling AA. "Excess Argon": the 'Achilles' heel" of potassium-argon "dating" of volcanic rocks. Vital Articles of Science/Creation. Institute for Creation Research. January 1999.

Shows how excess argon can give false dates with the potassium-argon dating method. Also has a list of young volcanic rock giving old dates. Some deposits, which are modern, have been dated to 100+ million years ago.

Snelling AA. Potassium-argon and argon-argon dating of crustal rocks and the problem of excess argon. Vital Articles of Science/Creation. Institute for Creation Research. March 1999.

Show how crustal argon has contaminated all argon based dating system. This gives old ages for young strata.

Stanely SM. *Earth and Life Through Time*. W.H. Freeman and Co. New York. 1986.

"Although radiometric dating provides a special kind of geologic time scale—specifically an absolute scale, or one based on years—most geologic correlations are still based on fossil occurrences. This is true not only because fossils are more common in sedimentary rocks than are radioactive elements, but also because the analysis of fossils usually allows for greater accuracy." p. 123

The fossils always have the final word in dating. The reason is that fossils are supposed proof of evolution and in reality radiometric dating is not absolute and subject to many inherent problems and weaknesses.

Stuiver M. Radiocarbon timescale tested against magnetic and other dating methods. *Nature*. 273:271-274. 1978.

Abstract—"A detailed comparison of conventional radiocarbon years with calendar years covering the past four centuries is given. Relatively large atmospheric ^{14}C changes are encountered over this time, and even very precise ^{14}C dating cannot entirely solve the problems of age calibrations. By matching radiocarbon ages with ages derived from $^{230}\text{Th}/^{234}\text{U}$, thermoluminescence and magnetic dating, the ^{14}C timescale is shown to deviate by a maximum of 2,000 yr over the 9,000-32,000 yr BP interval."

Stuiver M. *Nature*. Tree ring, varve and carbon-14 chronologies. 228:454-55. 1970.

Author tries to correlate the ages given by various dating methods and finds some agreement but mostly a lack of agreement. This study indicates that ^{14}C levels have varied as much as 10 percent. Most of the variance was attributed to changes in the Earth's magnetic field, causing a change in the solar flux reaching the Earth, and changes in the carbon exchange rate between the atmosphere and the oceans due to temperature, sea level, and ice cover changes.

Suess H. The three causes of the secular C14 fluctuations, their amplitudes and time constants. Nobel Symposium 12th:1969:Uppsala Universitet. Wiley Interscience Division. New York. p. 595-605. 1970.

Abstract—"Explanations for the observed variations of the C14 level in atmospheric carbon dioxide may be sought in: (1) changes in the C14-production rate due to changes in the intensity of the geomagnetic field. (2) changes in the production rate due to the modulation of the cosmic-ray flux by solar activity, and (3) changes in the geochemical radiocarbon reservoirs and in the rates of carbon transfer between them... The variations in the C14inventory are of the order of 3 per cent, their explanation requiring changes in the C14-production rate of the order of 50 per cent...Cycles with such periods can supposedly be recognized in solar activity."

Takahashi K. Boyd RN. *et al.* Bound-state beta decay of highly ionized atoms. *Physical Review C* 36:4:1522-28. 1987.

The author predicts that the half-life of more than 25 different radioactive isotopes will disintegrate in an accelerated fashion when the atoms are in a highly ionized state. This type of decay is termed Bound State β^- decay (β_b). This type of decay occurs when electrons are created in the empty electron shells instead of the empty continuum of space. Even some normally non-radioactive atoms will become radioactive in an ionized condition. This theoretically proves that radioactive decay rates can be accelerated and are not unchangeable. Later this hypothesis was demonstrated to be correct by Jung and Bosch ([Jung 1992](#) and [Bosch 1996](#)).

Tarbutck EJ. Lutgens FK. *Earth an Introduction to Physical Geology*. Prentice Hall. Upper Saddle River, NJ. 1996.

"Sources of Error. It is important to realize that an accurate radiometric date can be obtained only if the mineral remains a closed system during the entire period during its formation; that is, a correct date is possible only if neither addition nor loss of parent or daughter isotopes occurred. This is not always the case...If parent/daughter ratios are not always reliable, how can meaningful radiometric dated be obtained? One common precaution against unknown errors is the use of cross checks. Often this simply involves subjecting a sample to two different radiometric methods. If the two dates agree, the likelihood is high that the date is reliable. If, on the other hand, there is an appreciable difference between the two dates, other cross check must be employed to determine which, if either, is correct." p. 185

This quote out of a standard college geology textbook shows that there is much doubt about the radiometric methods commonly employed. Absolute dating is not absolute dating in the true sense of the definition. In reality it is simply educated guessing.

Taylor RE. Berger R. *et al.*, Major revisions in the Pleistocene age assignments for North American human skeletons by C-14 accelerator mass spectrometry: none older than 11,000 C-14 years B. P. *American Antiquity*. 50:1:136-40. 1985.

This article reveals how earlier dating methods were proven false by a more modern dating method. The old method, amino acid racemization, gave ages of > 70,000 years. The new mass spectrometry C-14 method gave ages of about 5,000 years. This article also states that some of the old C-14 dates of > 23,600 years old and > 14,800-17,150 were redated and gave new ages of 3,560 and 5,100 years respectively. This shows that the radiocarbon dates have many factors that cause anomalous dates and that the procedure is highly suspect. In all cases a little more humility on the part of scientists touting the various scientific dating methods is probably needed.

"Several brief comments can be made concerning the significance of these values. Perhaps the most puzzling aspect is the AMS C-14 values obtained for the Los Angeles and Laguna skeletal fragments. Both of these samples had been previously C-14 dated by one of us (RB)...At present, it is unclear why there should be such a difference between the decay and AMS counting result for both skeletons. In order to clarify this discrepancy, further measurements are planned."

Bias—Fossil, Evolutionary, Philosophical, etc.

Anonymous. Puzzling out man's ascent. *Time* (November 7, 1977), pp. 64-78.

"Still, doubts about the sequence of man's emergence remain. Scientists concede that even their most cherished theories are based on embarrassingly few fossil fragments, and that huge gaps exist in the fossil record. Anthropologists, ruefully says Alan Mann of the University of Pennsylvania, 'are like the blind men looking at the elephant, each sampling only a small part of the total reality.' His colleagues agree that the picture of man's origin is far from complete."

Dalton R. Anthropologist rocked by fossil access row. *Nature*. 428:881. 2004

Anthropology is the only science where the data is not made available to all. In other words, not everyone is allowed access to the various fossils—this includes even most evolutionary scientists. Most evolutionists are in the unusual position of not having access to the data that supports their theory. Evolution is in reality a philosophy. In the area of human evolution not being able to examine the evidence used to support it helps insure that only those with the proper philosophical attitude can study the evidence. This article indicated the squabbles that can occur because of this.

"Palaeoanthropologists are falling out over who should have access to data on the most prized fossils of our human ancestors, once they have been discovered in the field."

"Tattersal, who wants data for the books he publishes on hominids, say researches should have full access to the specimens immediately after initial publication...But Timothy White, a palaeoanthropologist at the University of California, Berkeley, whose team has made some of the biggest discoveries in Ethiopia, disagrees. "We don't think laboratory workers or book publishers should dictate our publication schedule," he says. "We're the ones who seek, find, clean, restore and study the fossils, and put them into context." The NSF's task is complicated by the question of whether it should even be publishing guidelines on the handling of specimens that belong to the nation where they are found, such as Ethiopia or Kenya. Museums there often demand approval from the discoverer before they grant other researchers access."

Gibbons A. *The First Humans: the Race to Discover our earliest Ancestors*. Doubleday. New York. p. 245-46. 2006.

This well written and engaging book covers the bias, rivalries, and personalities of many of the present day fossil hunters. It shows that fossils must be interpreted and how individual outlook colors the interpretations. It reveals how the fossils must be interpreted and how the fossil data is not available to everyone but is considered the personal property of the discoverer.

"I found it impossible, however, to separate the human story of the quest from the scientific result; science is a social endeavor and the personal politics influence not only who gets access to the data, in the form of fossils and fossil sites, but even how researchers interprets the fossil and formulate hypotheses. In the end, I decided to include personal details where they influenced the science or revealed the motivation of the scientists."

Howell FC. *Early Man*. Time Life Books. New York. p. 21. 1965.

Evolution is a theory that requires faith. This faith was much needed at the beginning of the formulation of evolution dogma. Many lay people are under the mistaken idea that early scientists found transitional fossils between man and his ape like ancestors. They assume that the evidence cried out in favor of evolution. In reality what was promulgated first was the idea/theory of man's descent from the animals. Latter fossil evidence was found to support this concept. Scientists simply found what they were looking for.

"The Pangs of Evolution—The first evolutionists had their work doubly difficult for them. Despite their growing faith in the evolutions of man, they had so little fossil evidence to go on that their theories were of necessity largely speculative. Darwin, in fact, wrote his epochal *The Descent of Man* without a single subhuman fossil as evidence to support his theory."

Jones, J. S., "A Thousand and One Eves," review of *The Search for Eve*, by Michael H. Brown (Harper & Row, 1990, 357 pp.), *Nature*, vol. 345 (May 31, 1990), pp. 395-396.

"Palaeoanthropologists seem to make up for a lack of fossils with an excess of fury, and this must now be the only science in which it is still possible to become famous just by having an opinion. As one cynic says, in human palaeontology the consensus depends on who shouts loudest.

"But although genetics can tell us a lot about the patterns of relatedness of living populations, it can do little more than speculate about the time and place when they split. What comes out of a genetic model often depends on what assumptions go in: to take an unusually rigorous view of molecular evolution—that of the creationist Duane Gish—the fact that man and watermelon are both 97 per cent water does not necessarily mean that they have a recent ancestor in common."

Jordan, Paul. *Neanderthal: Neanderthal Man and the Story of Human Origins*. Sutton Publishing Limited. Gloucestershire. p 19. 2000.

In the search for early man, theory was molded first and then the facts were found to fit the theory. In the following case notice how species and genus are formulated even before a single bone is found. Ernst Haeckel was the originator of the fraudulent embryonic diagrams that are used to support evolution and the popular "otongeney recapitulates phylogeny" concept. The bias and prejudice in theory first-facts later is continually overlooked by the scientific community.

"But in 1868 the zoologist Ernst Haeckel boldly constructed a scheme of the descent of man from an ape ancestor through an intermediate and as yet undiscovered form to which he gave a classificatory name, far all the world as though he had its bones in front of him and sufficient others to compare them with so as to create a new genus and species. The name he gave to this hypothetical missing link between apes and men was *Pithecanthropus alalus*, meaning Ape-man without speech. According to the rigorous scientific rules of modern biology, he had no business creating a name for a genus not yet identified in the fossil record, nor for a species of that genus either, but his name is interesting historically. It posited a creature in which pongid (ape) traits were mingled with incipient hominid (human ones), and such creatures have been subsequently found, though their form in detail might have surprised Haeckel..."

Lemonick MD. Before the big bang. *Discover Magazine*. p. 34-41. February 2004.

Scientists accuse those that base their understanding of creation on the bible as being faith based. Yet scientists show more faith than most bible believers. Since recent evidence has shown that the universe is expanding and will no longer contract (Coles 1998), hence having a beginning and possibly a Creator, other theories are being examined. Here is an example of a faith based

theory that says this universe is just one of many universes. They see no problem in conjuring up many unobservable, untestable, universes but these same scientists will scoff at someone who claims a higher power created all that exists. Articles like this show that much of science that deals with creation and origins is simply philosophy (or faith) masquerading as science.

"Cosmologists Paul Steinhardt and Neil Turok have a radical idea that could wipe away these in a violent instant. Instead, the universe as we know it is a small cross section of a much grander universe whose true magnitude is hidden in dimensions we cannot perceive. What we think of as the Big Bang, they contend, was the result of a collision between our three-dimensional world and another three-dimensional world less than the width of a proton away from ours—right next to us, and yet displaced in a way that renders it invisible. Moreover, they say the Big Bang is just the latest in a cycle of cosmic collisions stretching infinitely into the past and into the future. Each collision creates the universe anew. The 13.7-billion-year history of our cosmos is just a moment in this endless expanse of time."

"Conjuring up new, unknown energy fields goes against both common sense and one of the most cherished scientific doctrines. A principle known as Occam's razor says the simplest possible explanation for natural phenomena is usually right."

"Joel Primack, a physicist and cosmologist at the University of California at Santa Cruz, isn't even all that interested in whether it's right or wrong. 'I think it's silly to make much of a production about this stuff,' he says. 'I'd much rather spend my time working on the really important questions observational cosmology has been handing us about dark matter and dark energy. The ideas in these papers are essentially untestable.'"

Lewin, Roger, *Bones of Contention*. Simon and Schuster. New York. 1987.

"It is an unfortunate truth that fossils do not emerge from the ground with labels already attached to them. And it is bad enough that much of the labeling was done in the name of egoism and a naive lack of appreciation of variation between individuals; each nuance in shape was taken to indicate a difference in type rather than natural variation within a population. This problem has in some part been eased in the half-century since Hooton made his pithy remarks. But it remains inescapably true that applying the correct label is astonishingly difficult, not least because such labels are in a sense arbitrary abstractions; and especially so when the material on which the analysis is being done is fragmentary and eroded. 'It is an incredibly difficult problem,' says Lord Zuckerman. 'It is one so difficult that I think it would be legitimate to despair that one could ever turn it into a science.'"

"In fact, 'virtually all our theories about human origins were relatively unconstrained by fossil data,' observes David Pilbeam. 'The theories are ... fossil-free or in some cases even fossil-proof.' This shocking statement simply means that there is and always has been far more fleshing out of the course and cause of human evolution than can fully be justified by the scrappy skeleton provided by the fossils. As a result, he continues, 'our theories have often said far more about the theorists than they have about what actually happened.'"

"All of which suggests that it is easier to recognize bias in others than to admit it in oneself. It also probably means that some questions in paleoanthropology may well be impossible to answer with any degree of certainty—and human beings dislike uncertainty, especially when it concerns themselves. Combine these two truths and you get an inevitable result, as noted by Johanson: 'Anthropologists who deal with human fossils tend to get very emotionally involved with their bones.'" p. 348

Morgan, Elaine, *The Scars of Evolution*. Oxford University Press. New York. 1994.

"The essential point is that evolution takes place in response to things which *have happened*, not things which are predestined to happen. Man is no more an evolutionary pinnacle than a tree

is, or a termite or an octopus. His emergence was no more inevitable than that of any other species."

"Four of the most outstanding mysteries about humans are: (1) why do they walk on two legs? (2) why have they lost their fur? (3) why have they developed such large brains? (4) why did they learn to speak?

"The orthodox answers to these questions are? (1) 'We do not yet know'; (2) 'We do not yet know'; (3) 'We do not yet know'; (4) 'We do not yet know'. The list of questions could be considerably lengthened without affecting the monotony of the answers."

"In short, the chief mystery does not lie in any one of these anomalies, not even the wonderful brain or the dexterous hands or the miracle of speech. It lies in the sheer number and variety of the ways in which we differ from our closest relatives in the animal kingdom."

"The story of the bones tells us much about the origins of man and it also tells us a few things about scientists. With few exceptions, when confronted with a maverick idea, they are confident they can identify whether or not it is preposterous by the gut instinct they have about it. Most of them feel that this absolves them of any obligation to examine it in detail or to give their reasons for rejecting it." p. 196

Pilbeam D. review of *Origins*, by Richard E. Leakey and Roger Lewin (Dutton, 1977, 264 pp.). *American Scientist*. 66:378-79. (May/June 1978).

"My reservations concern not so much this book but the whole subject and methodology of paleoanthropology. But introductory books—or book reviews—are hardly the place to argue that perhaps generations of students of human evolution, including myself, have been flailing about in the dark; that our data base is too sparse, too slippery, for it to be able to mold our theories. Rather, the theories are more statements about us and ideology than about the past. Paleoanthropology reveals more about how humans view themselves than it does about how humans came about."

Pilbeam D. *Rearranging our Family Tree*. *Human Nature*. (June 1978), pp. 39-45.

"As I now realize, extinct hominoids were not particularly modern. They were not like either living apes or human beings, but instead were unique, distinct animal species."

"It is quite possible that one or more of the dryopithecids gave rise to the living forest apes. Unfortunately, the fossil record of pongids is nonexistent, making a glaring deficiency in the whole story."

"All this makes a much more complex picture of hominoid evolution than we once imagined. It no longer resembles a ladder but is, instead, more like a bush."

"Hominids evolved, as did many other mammal groups, with diverse and overlapping radiations. There is no clear-cut and inexorable pathway from ape to human being."

"In the course of rethinking my ideas about human evolution, I have changed somewhat as a scientist. I am aware of the prevalence of implicit assumptions and try harder to dig them out of my own thinking. I am also aware that there are many assumptions I will get at only later, when today's thoughts turn into yesterday's misconceptions. I know that, at least in paleoanthropology, data are still so sparse that theory heavily influences interpretations. Theories have, in the past, clearly reflected our current ideologies instead of the actual data."

Provine W. Scientist, face it! Science and religion are incompatible. *The Scientist*. 2:16:10. September 5, 1988.

This article is a typical example of the bias most scientists have toward creation and God. Scientists often take creationists to task for believing in God since God exists outside of the realm of science. If this were true then scientists are being hypocritical for claiming that God does not exist since God's existence or nonexistence, according to them, can only be proven by non-scientific methods. By claiming to be no biased scientists are the most biased of all (for a more objective analysis that appeared in the same issue see [Saffran 1988](#)).

"The implications of modern science, however, are clearly inconsistent with most religious traditions. No purposive principles exist in nature. Organic evolution has occurred by various combinations of random genetic drift, natural selection, Mendelian heredity, and many other purposeless mechanisms. Humans are complex organic machines that die completely with no survival of soul or psyche. Humans and other animals make choices frequently, but these are determined by the interaction of heredity and environment and are not the result of free will. No inherent moral or ethical laws exist, nor are there absolute guiding principles for human society. The universe cares nothing for us and we, have no ultimate meaning in life."

Rowe T. Ketcham RA. *et al.* The Archaeoraptor forgery. *Nature*. 410:539-40. 2001.

Reveals how the Archaeoraptor fossil was assembled. This forgery, half bird—half dinosaurs, was hailed as proof that the birds and dinosaurs are related. It was obtained from a fossil dealer with connections to the fossil trade in China. It was unveiled in the National Geographic Magazine November 1999 in an article entitled "Feathers for T-Rex." Although a sloppy forgery this fossil was accepted by evolutionist as proof of the marvels of bird—dinosaur evolution.

"In the next phase, 26 pieces containing bones and a few contiguous pieces were sequentially articulated against the rear half of the skeleton to 'complete' it. None of these pieces preserves evidence of a natural attachment to the bird skeleton pieces, and in only a few cases are these pieces naturally associated with one another. Also, the 'paired' tibiae/fibulae and feet are split parts and counterparts from a single side, positioned as if they were right and left."

"We conclude that *Archaeoraptor* represents two or more species and that it was assembled from at least two, and possibly five, separate specimens. Additional work in China verified that the tail is from an entirely different specimen, which has been described as a new species of dromaeosaur. Sadly, parts of at least two significant new specimens were combined in favour of the higher commercial value of the forgery, and both were nearly lost to science. Palaeontology was also badly damaged by the Piltdown forgery and the 'lying stones' of Johann Beringer, and many fossils have been unwittingly or deliberately subjected to misleading reconstruction."

Saffran M. Why scientists shouldn't cast stones. *The Scientist*. 2:16:11. September 5, 1988.

This study shows that many scientific professionals do not support the theory of evolution. In reality a majority of biologists support evolution but a large percentage of other scientific professionals do not. The second group contends that God somehow must be involved in the process through outright creation or theistic evolution (for a contrary opinion published in the same issue see [Provine 1988](#)).

"Thus I was particularly intrigued by a recent survey in *Industrial Chemist*, a McGraw-Hill monthly that is distributed free to tens of thousands of chemists. A popular feature is the "Benchmark Survey" that solicits opinions of the readership on questions usually related to their work. The survey discussed in the November 1987 issue, however, asked for opinions on the topic of evolution...A total of 519 readers responded. Of these almost half, 48.3%, answered "yes" to

the question "Do you think it is possible that humans evolved in a continuous chain of developments from simple elements in a primordial soup, without supernatural intervention?" But a majority, 51.7%, believed that supernatural intervention played a role. And of these, about half, 22.8% of all respondents, did not think that evolution was possible...A similar number, 20.8%, answered "yes" to the question "Does the theory of evolution conflict with your religious beliefs?" And even more striking, almost half of the respondents, 47.2%, thought that both "scientific" creationism and evolution should be taught in schools. One possible conclusion from this is that the battle against religion masquerading as a scientific theory does not always pit scientists against nonscientists. To paraphrase Walt Kelly's cartoon character Pogo, we have met the enemy and sometimes he is us."

Stringer CB. "The Legacy of *Homo Sapiens*," review of *Origins Reconsidered: In Search of What Makes Us Human*, by Richard E. Leakey and Roger Lewin (Doubleday, 1992). *Scientific American*. 268:138-141. May 1993.

"The study of human origins seems to be a field in which each discovery raises the debate to a more sophisticated level of uncertainty.... Such discussions have made the field fascinatingly contentious, and they have probably won it more newsprint than it might otherwise have received."

"Leakey and Lewin are occasionally somewhat wise after the event. Readers would probably be better served if the authors were more frank about how they (like many of us) have had to change position on a number of important issues in paleoanthropology."

Thomson KS. Piltdown Man: the great English mystery story. *American Scientist*. 79:194-201. (May/June 1991).

"The Piltdown man forgery of 1912 was one of the most successful and wicked of all scientific frauds. Although the discovery of the supposedly primitive British 'dawn man'—scientifically christened *Eoanthropus dawsoni*—was announced almost 80 years ago, the forgery continues to attract attention because it has never been satisfactorily resolved."

"I believe the most plausible answer to all this has been sitting around for about 10 years—unappreciated perhaps because everyone else has been pursuing their own pet theories. Back in 1980, Leonard Harrison Matthews devised a devilishly ingenious scheme that explains nearly all of the anomalies and motives. Matthews scheme can be modified and woven into an account of the whole affair, making the perfect English crime.

"Once the extent to which he carefully prepared his story is appreciated, Dawson has to be seen as the sole instigator of the fraud."

"While we can only deplore Dawson's wicked forgery, it has to be admitted that it would not have succeeded without the headlong acceptance of shoddy evidence by scientists who should have known better. As the W. C. Fields movie observes: 'You can't cheat an honest man.' Perhaps Dawson had the last laugh after all."

Watson L. The water people. *Science Digest*. 90:44. (May 1982).

"The fossils that decorate our family tree are so scarce that there are still more scientists than specimens. The remarkable fact is that all the physical evidence we have for human evolution can still be placed, with room to spare, inside a single coffin.

"Not surprisingly, despite the diligent research done in East Africa by paleontologists Richard Leakey and Donald Johanson, there are gaping holes in the evolutionary record, some of them extending for 4 to 6 million years. Modern apes, for instance, seem to have sprung out of nowhere. They have no yesterday, no fossil record. And the true origin of modern humans—of upright, naked, toolmaking, big-brained beings—is, if we are to be honest with ourselves, an equally mysterious matter."

Zuckerman, Solly, *Beyond the Ivory Tower*. Taplinger Publishing Company. New York. 1971.

"... the interpretation of man's fossil history, where to the faithful anything is possible—and where the ardent believer is sometimes able to believe several contradictory things at the same time."

"... no scientist could logically dispute the proposition that man ... evolved from some ape-like creature ... without leaving any fossil traces of the steps of the transformation." p. 224

Human Fossil Footprints and Bipedalism

Berg C. How did the Australopithecines walk? a biomechanical study of the hip and thigh of *Australopithecus afarensis*. *Journal of Human Evolution*. 26:259-273. (April 1994).

"The present results lead to the conclusion that the bipedalism of the *Australopithecus* must have differed from that of *Homo*. Not only did *Australopithecus* have less ability to maintain hip and knee extension during the walk, but also probably moved the pelvis and lower limb differently. It seems that the australopithecine walk differed significantly from that of humans, involving a sort of waddling gait, with large rotary movements of the pelvis and shoulders around the vertebral column. Such a walk, likely required a greater energetic cost than does human bipedalism. The stride length and frequency of australopithecines, and consequently their speed, should have differed from that of *Homo* in contrast to some recent hypotheses of dynamic similarity among hominids. A previous paper has suggested that the pelvic proportions of *Australopithecus* could provide some arguments for an arboreal locomotion. The results of the present study suggest amplification of this opinion."

Bower B. A walk back through evolution. *Science News*. 135:251. (April 22, 1989).

"Three hominids made some remarkable impressions 3.5 million years ago. They walked across damp volcanic ash that later hardened and preserved their footprints at the Tanzanian site of Laetoli."

"But the first detailed study of the gaits and footprints of modern people who walk barefooted indicates the Laetoli prints are much like those of *Homo sapiens* and were probably not produced by Lucy's relatives, reports Russell H. Tuttle of the University of Chicago."

"The few toe bones found at Hadar curve downward in an ape-like manner. Hominids with curved toes could not have made the Laetoli footprints, he maintains."

Fischman J. Little foot, big implications. *Magazine*. January 1996.

Little foot from Member 2 from Sterkfontein cave in South Africa has been redated to a more recent date of 2.5-1.5 Mya. This would mean that this hominin would not have had time to evolve into an *Australopithecus* with a human foot (see [Berger 2002](#) in the *Australopithecus* section).

"Then he found another bone that fit with the first, and another, and yet another. When he put the pieces together, Clarke was holding the inner left foot, from ankle to toe, of a 3- to 3.5-million-year-old australopithecine, one of our earliest ancestors. It was the most complete ancient foot ever found... While the back of the foot looks like that of modern humans, the front, particularly the big toe, resembles the grasping toe of a chimpanzee. 'Its great toe was highly mobile and was set at a wide angle to the other toes, as in apes, not parallel to them as in humans.'"

Herbert W. Was Lucy a climber? dissenting views of ancient bones. *Science News*. 122:116. (August 21, 1982).

"Anthropologist Randall L. Susman and anatomist Jack Stern of the State University of New York at Stony Brook say that Lucy's bones and other fossils from the Hadar region at Ethiopia indicate that the earliest known species of hominid (called *Australopithecus afarensis*), while adapted to walking, was still spending considerable time in the trees. University of Chicago anthropologist Russell Tuttle ... also argues, based on an analysis of the Laetoli footprints in Tanzania, that another more human species of ape-man coexisted with *A. afarensis* about 3.7 million years ago; this unnamed species, rather than *A. afarensis*, was probably the direct ancestor to *Homo sapiens*, Tuttle says."

"In addition, Susman says, Lucy's limb proportions indicate that she had not yet developed an efficient upright gait."

"Tuttle agrees that, based on anatomical data, *A. afarensis* must have been arboreal, but he goes even further, arguing that Lucy's pelvis shows a flare that is better suited for climbing than for walking. More importantly, he says, the Laetoli footprints do not match the foot bones found in Hadar; where the Hadar foot is ape-like, with curved toes, the footprints left in Laetoli are 'virtually human.' Tuttle concludes that the bipedal species which lived in Tanzania is a different species from *A. afarensis*—and one more closely related to humans."

Johanson, Donald, *Lucy the Beginnings of Humankind*. (New York: Simon and Shuster, 1981) p. 250.

"Make no mistake about it, " says Tim. "They are like modern human footprints. If one were left in the sand of a California beach today, and a four-year-old were asked what it was, he would instantly say that somebody had walked there. He wouldn't be able to tell it from a hundred other prints on the beach, nor would you. The external morphology is the same. There is a well-shaped modern heel with a strong arch and a good ball of the foot in front of it. The big toe is straight in line. It doesn't stick out to the side like an ape toe, or like the big toe in so many drawings you see of australopithecines in books. "

Stanford CB. Brief communication: arboreal bipedalism in Bwindi chimpanzees. *American Journal of Physical Anthropology*. 119:87-91. 2002.

According to evolutionary theory humans became bipedal after descending from the trees. Bipedalism marks humans as evolutionarily advanced. This paper reports that chimpanzees often walk bipedally and they are bipedal in the trees (arboreal bipedalism). If this is correct, one of the driving factors that make us human, our bipedalism and our descent from the trees, is shown to be false.

Abstract—"Bipedalism has long been considered an evolutionarily interesting but rare behavior in wild chimpanzees... Bipedalism was used as part of a behavioral repertoire that integrated brachiation, four-limbed suspension, and forelimb-supported standing for effective small-fruit

foraging. These observations suggest that under certain ecological conditions, arboreal bipedalism can be an important posture for wild chimpanzees..."

"In this paper, I report on the extensive use of arboreal bipedalism by a previously little-known chimpanzee population. During one 2-week period in May 2001, the Ruhija chimpanzees of Bwindi Impenetrable National Park were bipedal at a rate exceeding that published for any other population of free-ranging chimpanzees."

Tuttle RH. The pitted pattern of Laetoli feet. *Natural History*. 99:61-65. (March 1990).

"The first bipedal trail, consisting of five footprints in sequence, was discovered in 1977 at Laetoli site A. In a preliminary report, Mary Leakey noted that these prints, although short and very broad, appeared to be hominid."

"The contrast between these prints and the more distinctly human-shaped footprints from Laetoli site G, which were uncovered in 1978 and 1979, prompted me to question the initial interpretation. The two sites are only a mile apart and are virtually contemporaneous."

"In brief, a small bear walking bipedally (a cub looking for mama bear?) could have produced the Laetoli A trail."

"In preliminary reports by several paleoanthropologists, the trail at site G were portrayed as remarkably human. Yet they were presumed to have been created by *Australopithecus afarensis*, the same species as the 3-million-year-old skeletons of Lucy and other individuals discovered considerably to the north at Hadar, Ethiopia. My problem in accepting this was that the Hadar beasts had apelike features (notably, down-curved toes) that I just didn't detect in the G prints."

"The humanness of the plantar (sole) anatomy exhibited by the G prints is underscored by observing the feet and footprints of habitually barefoot people.... The footprints of both the Machiguenga and the Laetoli G bipeds exhibit strong heel, ball, and first toe impressions and a well-developed medial longitudinal arch, which is the hallmark of human feet."

"In sum, the 3.5-million-year-old footprint trails at Laetoli site G resemble those of habitually unshod modern humans. None of their features suggest that the Laetoli hominids were less capable bipeds than we are. If the G footprints were not known to be so old, we would readily conclude that they were made by a member of our genus, *Homo*.... In any case, we should shelve the loose assumption that the Laetoli footprints were made by Lucy's kind, *Australopithecus afarensis*. The Laetoli footprints hint that at least one other hominid roamed Africa at about the same time."

White T. Busse FH. Heikes KE. Evolutionary implications of Pliocene hominid footprints. *Science*. 208:175-176. (April 11, 1980).

"Vertebrate fossils and tracks from the Laetoli Beds are radiometrically dated to between 3.6 and 3.8 million years."

"Excavations at site G in 1978 and 1979 revealed trails of at least two hominid individuals.... The uneroded footprints show a total morphological pattern like that seen in modern humans... Spatial relationships of the footprints are strikingly human in pattern.... The Laetoli hominid trails at site G do not differ substantially from modern human trails made on a similar substrate."

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