

ESSAYS ON ORIGINS

David N. Menton, Ph.D.

Dr. Menton received his Ph.D. in Biology from Brown University. He has been involved in biomedical research and education for over 40 years.

Table of Contents

Table of Contents.....	1
INTRODUCTION.....	2
ESSAY 1: The Creation-Evolution Controversy	3
ESSAY 2: The Origin of Evolutionism: It Didn't Begin With Darwin.....	5
ESSAY 3: Darwin Didn't Discover Evolution or Natural Selection	7
ESSAY 4: The Origin of Life.....	9
ESSAY 5: There Ought to Be a Law Against Evolution -- And There is!	11
ESSAY 6: Is Evolution a Theory, A Fact, Or A Law? - Or, None Of The Above?...	13
ESSAY 7: If We Resemble Apes, Does That Mean We Evolved From Apes?.....	15
ESSAY 8: Is The Human Embryo Essentially A Fish With Gills?	17
ESSAY 9: The Human Tail, and Other Tales of Evolution	19
ESSAY 10: Natural Selection And Macroevolution	21
ESSAY 11: Sickle Cell Anemia And Other "Good" Mutations Of Evolution.....	23
ESSAY 12: Can Evolution Produce An Eye? Not A Chance!.....	25
ESSAY 13: What Do The Fossils Say?.....	27
ESSAY 14: The Hopeful Monsters of Evolution	29
ESSAY 15: Climbing The "Ladder Of Life" In The Grand Canyon.....	31
ESSAY 16: The Dating Game	33
ESSAY 17: The Religion of Nature: Social Darwinism	35
ESSAY 18: Species, Speciation and the Genesis Kind.....	37
ESSAY 19: Monkeying With The Scopes Monkey Trial	39
ESSAY 20: What A Difference A Day Makes!.....	41
ESSAY 21: Making Man Out of Monkeys.....	43
<u>ESSAY 22: Making Monkeys Out of Man</u>	<u>45</u>

INTRODUCTION

The origin of this booklet on origins may be traced back to a breakfast meeting in St. Louis in the Spring of 1993 when I agreed to write a series of 12 articles on the creation/evolution controversy for a local Christian newspaper, the St. Louis Metrovoice. Overcoming an almost terminal case of "writers cramps," I completed 24 articles (each of 1200-1400 words in length) in a little over two years. It is a slightly edited and revised version of these articles that comprise the book you are now reading.

The author is indebted to Wade Brooks who first suggested the series, Mark and Pat Andrews who paid most of the cost of their publication for the first year, and to Jim Day (editor of the Metrovoice) whose encouragement and enthusiasm kept me at the keyboard. Where appropriate, nearly all authors acknowledge the enduring patience of their spouse (who one imagines suffering in sad and inconsolable solitude), but that would hardly suffice for my wife Debbie. She not only proof read (indeed critically reviewed) all my articles, but has gone on to do the same for the St. Louis Metrovoice. I especially thank Deb for her efforts to make a good writer out of me - and for her grace in defeat.

The topics covered in this series of essays were written for an audience of intelligent Christian layman, thus the reader will find them neither scholarly or trivial. No attempt was made to keep the discussion scrupulously secular in the hope that it might better appeal to the atheist/agnostic, or be approved for use in the public schools. Such efforts are unnecessary and perhaps even futile. One has only to follow the raging creation/evolution debates on the computer internet and bulletin boards to observe that attempts to explain origins (whether by creationists or evolutionists) are pregnant with religious implications. Also, the author freely confesses his own biases as both a scientist and a Bible believing Christian. The popular creationist lecturer and author, Ken Ham, points out that it is not really a question of who is biased and who isn't, but rather, whose bias is the best bias to be biased by.

While the essays are arranged in a logical sequence, the reader will find that they can be read in any order as most do not critically depend on that which has gone before. I hope the brevity of these essays will encourage many to read them who might not otherwise tackle such a technical subject. The subject is a profoundly important one and whether or not the reader agrees with my conclusions, it is hoped that they will provoke thought and discussion.

Dr. David Menton

ESSAY 1: The Creation-Evolution Controversy

"Some piously record 'In the beginning God,' but I say in the beginning hydrogen." This pompous claim of crass materialism challenging the creative work of God by astronomer Harlow Shapley reflects the quandary students face today in our public and private schools. Many students, for example, have been required to watch and discuss the 13-part television series "Cosmos" featuring one of Shapley's best known students, Carl Sagan. In the first sentence of his book *Cosmos* (which is meant to supplement the television series), Sagan confidently declared in capital letters that "THE COSMOS IS ALL THAT IS OR EVER WAS OR EVER WILL BE." Sagan assures us that "we humans are the products of a long series of biological accidents" and concludes that all of our human traits - loves and hates, passions and despairs, tenderness and aggression are simply the result of "minor accidents in our immensely long evolutionary history." Sagan believes that "men may not be the dreams of the gods, but rather that the gods are the dreams of men." In an interview published in the *St. Louis Globe-Democrat* (Oct. 6, 1980), Sagan was asked to comment on his view of the future of man. Sagan replied, "I feel in order to survive we someday must be able to give up our allegiance to our nation, our religion, our race and economic group and think of ourselves more as just a temporary form of life . . ."

We hear much about that great "wall of separation" that the framers of our Constitution were supposed to have erected to protect us from state-mandated religion. But are we to also be protected from state-mandated instruction in evolutionary beliefs and speculations that threaten to undermine the religious beliefs of many of our students? Evolution is a jealous god that neither seeks nor welcomes divine intervention. Julian Huxley, one of evolution's most vocal champions, declared that "the whole of reality is evolution-a single process of self transformation." In this view there can be nothing above or outside of evolution, and thus the origin of religion itself is merely a minor blip in the recent evolutionary history of the universe. Even so, evolutionists often argue that there is nothing incompatible between religion and evolution as long as each confines itself to its own legitimate domain. But what limits can be set for a natural process that claims to be nothing less than the whole of reality?

Science, or more accurately "scientism," has not hesitated to wade into the domain of religion. In 1981, theologians and scientists met at Massachusetts Institute of Technology under the auspices of the World Council of Churches to discuss the topic "Science, Faith and the Future." The general premise of the conference was that modern science requires us to develop an entirely new religion for the future. One theologian proposed evolutionary theory as "an especially rich source" for this new religion. Another proposed "ecotheology" as an approach to religion that "starts with the premise that the universe is god." Not to be outdone by theologians, a scientist claimed to have localized the exact part of the brain responsible for what "traditional religion calls the intuitive perception of God." Religious experience, he claimed, is "a product of the parietal-occipital region on the nondominant side of the brain." [Long, 1981 #246] Who knows - by now he may even have found a cure!

Although many popular spokesmen for evolutionism are self-proclaimed atheists or agnostics, this certainly does not mean that all those who accept evolution in principle are atheists or agnostics. Indeed, many leaders, teachers and clergy in most major Christian and Jewish denominations have tried to make their peace with Darwin. These theologians generally argue that the Bible tells us who created, while science (that is evolution) tells us how He "created." This perhaps explains why a large gathering of Catholic educators meeting in St. Louis a few years ago invited Carl Sagan to be their keynote speaker!

Darwin himself received his formal education in theology, not science. His atheist father sent him to divinity school at Cambridge University after he dropped out of medical school. In his autobiography, Darwin claimed to have once believed in God and "every word of the Bible" but confessed that his growing evolutionary views gradually led him to unbelief. In the end he

considered the Old Testament to be a "manifestly false history of the world" and said that he "could hardly see how anyone ought to wish Christianity to be true." [Darwin, 1896 #242] Sadly, the widespread rumors of his deathbed repudiation of evolutionism and return to Christianity are unfounded.

Today we encounter evolutionary indoctrination wherever we turn. It may be incorporated into almost any subject at any grade level in our schools, but it is especially prevalent in classes dealing with social studies, history and science. Outside the classroom, evolution is heavily promoted in our newspapers, popular magazines, television, radio, movies, national parks, museums, science centers, zoos and even on the backs of breakfast cereal boxes. Despite all this exposure, most Americans are still not convinced that evolution can explain the marvelous complexity we see all around us in nature.

A recent Gallop poll revealed that 47% of Americans believe "God created man pretty much in his present form at one time within the last 10,000 years." Only 9% believed that "man has developed over millions of years from less advanced forms of life" by a purely materialistic process. Most of the remaining respondents believed in some form of divinely-guided evolution. Still, the media would have us believe that those who reject evolution in favor of special creation comprise only a tiny minority, even among the religious - a small band of ignorant fundamentalists who are "poorly educated and easily led."

We will critically examine the scientific evidence both for and against evolution. Is the evidence for evolution so overwhelming that teachers may be justified in running rough-shod over the most cherished religious beliefs of many students and their parents? On the other hand, is there scientific evidence in support of special creation? Finally, can Bible-believing Christians safely make their peace with Darwin? We will attempt to answer these and many other questions on the relationship of science and Scripture. I think you are in for some real surprises.

ESSAY 2: The Origin of Evolutionism: It Didn't Begin With Darwin

Evolutionism is a belief system based upon the assumption that there is a purely materialistic explanation for the origin of virtually everything that ever has existed, or ever will exist. The essential feature of this belief (often called materialism) is that everything in nature arose spontaneously by a process of self transformation without the necessity of supernatural intervention. In today's public schools, history teachers teach how the universe evolved; earth science teachers tell how the earth evolved; biology teachers relate how living things evolved; and social studies teachers preach about how our values and religion evolved -- however, students are rarely instructed in how belief in evolutionism itself evolved. To be sure, it didn't begin with Darwin, nor was it first proposed by scientists working in the field or in the laboratory.

Ancient Greek philosophers were perhaps the first to clearly formulate a materialistic evolutionary concept of origins. It must be emphasized that these Greek philosophers were neither scientists nor experimentalists; rather they speculated on the origin of the universe in a way consistent with their religious and philosophical beliefs. Although many of the earliest Greek philosophers considered their gods to be creators, this began to change with the influence of Thales of Miletus. Thales (who lived at the time of Nebuchadnezzar's destruction of Jerusalem in 586 BC) founded the Milesian school of natural philosophy. One of the primary assumptions of this school of thought was that the origin of everything in nature could be explained in terms of its own material composition. Thus, they sought to explain the origin of everything by a process of self-assembly from some underlying material element. Thales believed that water was that basic element from which all things evolved.

Anaximenes (560-502 BC), a disciple of Thales' Milesian school, believed that air was the basic element from which everything evolved. He insisted that virtually everything in the universe (including the gods) was merely rarefied or condensed air! He believed that when air rarefied, it became fire -- which formed the sun and heavenly bodies -- and that when it condensed, it became cold and formed wind, water, and earth.

Heraclitus of Ephesus (535-475 BC) preferred fire as the basic element from which everything in the universe evolved. Like modern day evolutionists, Heraclitus was preoccupied with the idea of limitless change. He attempted to eliminate any necessity for a Creator by postulating a constantly changing world with neither beginning nor end. Since anything man declares to be eternal becomes his god, nature itself became the god of materialism.

Empedocles (484-424 BC) attempted to cover all bases by proposing that everything in the universe evolved from four basic elements - water, air, fire and earth. He believed that all parts of living organisms were formed independently and were brought together in random combinations. Those combinations which were not well suited to live, perished, while the better suited combinations survived. This speculation is strikingly similar to Darwinian "survival of the fittest," yet Empedocles predated Darwin by over 2,000 years!

Epicurus (341-270 BC) would have been very comfortable with "modern" evolutionary cosmologists. He believed that everything in the universe evolved by chance combinations of randomly moving elementary particles called atoms! Epicurus was the father of an influential philosophical system known as Epicureanism, which taught that the universe was eternal and that nothing could influence it from without. The seeds of today's crass materialism were sown in the Epicurean assumptions that the whole of existence is made of atomic particles or is a void -- and sensation is the sole source of all knowledge.

The most detailed account of the role of evolutionary materialism in Epicurean philosophy is found in Lucretius' *De Rerum Natura* (On the Nature of Things) written in the first century BC. Lucretius came remarkably close to Darwin's views on natural selection when he told of the

existence of monstrous creatures early in the earth's history which eventually disappeared because they proved to be unsuited to their changing environment. Like the other Greek philosophers of his day, Lucretius attempted to satisfy a deep philosophical need for a self-assembling cosmos without a sovereign Creator. For him, evolutionary materialism was an attempt to emancipate men from two great fears -- the fear of the arbitrary interference of the gods in the affairs of men, and the fear of accountability after death.

Epicurean philosophers were among those whom the apostle Paul encountered on his third missionary journey to Athens. Paul described them as men who "spent their time in nothing else but either to tell or to hear some new thing" (Acts 17:21). Paul pointed out to them that the primary difference between their gods (idols) and the true God hinged on the critically important matters of creation and our accountability to our Creator. He said: "I proclaim to you God, who made the world and everything in it, since He is Lord of heaven and earth, does not dwell in temples made with hands. Nor is He worshipped with men's hands, as though He needed anything, since He gives to all life, breath, and all things. And He has made from one blood every nation of men to dwell on all the face of the earth, and has determined their preappointed times and the boundaries of their dwellings, so that they should seek the Lord, in the hope that they might grope for Him and find Him, though He is not far from each one of us; for in Him we live and move and have our being, as also some of your own poets have said, 'For we are also His offspring.' Therefore, since we are the offspring of God, we ought not to think that the Divine Nature is like gold or silver or stone, something shaped by art and man's devising. Truly, these times of ignorance God overlooked, but now commands all men everywhere to repent, because He has appointed a day on which He will judge the world in righteousness by the Man whom He has ordained. He has given assurance of this to all by raising Him from the dead." (Acts 17:23-31; NKJ)

Sadly, even today there are many who profess to be Christians or Jews who seem unaware of the essential difference between Greek idols and the Creator God. The Scriptures tell us that our Creator "does whatever He pleases" (Ps. 115:3; NKJ), while idols cannot physically do anything -- "They have mouths, but they do not speak; eyes they have, but they do not see; They have ears, but they do not hear" (Ps 115:5-7; NKJ). Even some atheists have noticed that many liberal Christians and Jews appear to believe in a god that doesn't physically do anything (at least nothing specific to which they will admit). In an atheist tract entitled "There Is No God" (The American Atheists, PO Box 2117, Austin TX, 78768), Fred Woodworth states that the religious liberal denies that he believes in the "old God" but his "new god serves no purpose that he will define, so it cannot be attacked, but only denied." Woodworth correctly points out that "this is only an attempt to preserve the notion of a god after the substance has been destroyed. Lacking any separate function, such as being creator of the universe, etc., the idea of a god is completely to no purpose."

It is indeed tragic that God at times must use the likes of atheists and Balaam's ass (Num. 22:23-34) to instruct those who should know better.

ESSAY 3: Darwin Didn't Discover Evolution or Natural Selection

Charles Darwin is often portrayed as one of the greatest original thinkers of science on a par with the likes of Newton. While his book *On The Origin of Species* has probably had a greater impact on society than any other book -- except the Bible -- most of the evolutionary views he expressed in *Origin of Species* were neither original nor scientific, but rather had their roots in Pagan materialism. The essential "Darwinian" axiom of chance evolution by random change and "survival of the fittest" was broadly suggested by ancient Greek philosophers. Even the more refined concept of "natural selection," which is often viewed as a unique contribution of Darwin, was clearly expressed by many others as early as a 100 years before the 1859 publication of *Origin of Species*.

The French astronomer and mathematician Pierre de Maupertuis (1698-1759) is generally credited with being among the first to have developed an essentially modern theory of evolution which included a process of random change (mutation) and natural selection. In his book *Essai de Cosmologie* he said: "Chance one might say, turned out a vast number of individuals; a small proportion of these were organized in such a manner that the animals organs could satisfy their needs. A much greater number showed neither adaptation nor order; These last have all perished -- thus the species which we see today are but a small part of all those that a blind destiny has produced." Maupertuis was a very outspoken atheist who used his evolutionary speculation involving "blind destiny" and "chance" in an attempt to refute the necessity for a sovereign God and purposeful design in nature.

Charles Darwin's ideas on evolution were anticipated in nearly every essential detail by several of his predecessors including his own grandfather, Erasmus Darwin (1731-1802) -- a fact which Charles Darwin was loath to acknowledge. Erasmus Darwin was a very highly regarded physician, and one of a group of intellectuals whose writings helped to usher in the Industrial Revolution in England. A true "renaissance man," Erasmus Darwin was a talented poet and made important discoveries in many fields including medicine, physics, meteorology, horticulture and botany. Some of his books (even on highly technical subjects) were written entirely in poetry! In 1794 and 1797, Erasmus Darwin published a two-volume work titled *Zoonomia* (subtitled *The Laws of Organic Life*) in which he speculated on the chance evolution of all life by a purely materialistic mechanism involving adaptation through natural selection. Charles Darwin's notebooks reveal how heavily his own speculations on evolution were influenced by those of his grandfather. Yet in what must surely be one of the most self-serving examples of "the pot calling the kettle black," Charles Darwin sought to diminish the importance of his grandfather's evolutionary speculations as expressed in *Zoonomia* by declaring: "I was much disappointed; the proportion of speculation being so large to the facts given."

It should be recognized that not all of those who commented on natural selection before Darwin did so from an openly atheistic or even evolutionary point of view. Indeed, natural selection is an observable phenomenon that is entirely compatible with a literal interpretation of biblical Creation. Natural selection simply means that the natural variation which exists among the individuals of a species will render some individuals better suited to survive (and reproduce) under particular environmental circumstances than others of the same species. Thus, heavily-furred mammals might survive a particularly cold winter better than the more lightly-furred members of their own species. In a similar manner, a dog breeder might use "artificial selection" to select for dogs that are well suited for the particular demands of sheep herding or duck hunting. The important point is that in neither natural nor artificial selection is it possible to select for traits that are not already in the genes of the species.

The problem for the early evolutionists, who knew nothing about genetics, was the actual mechanism that produced the inherited variability required for natural selection to work. An even bigger problem -- though not generally recognized by early evolutionists -- was the biological source of fundamentally new traits that were not previously in the genes of the species. Jean

Baptiste de Lamarck (1744-1829) was a bitterly anti-Christian zoologist who proposed in 1809 two principles that purported to explain the source of the variation that led to new and useful structures in living organisms. The first of these -- called the "law of use and disuse" -- proposed that new organs (or modification of old ones) arise spontaneously through need satisfied by "use" and, accordingly, disappear through "disuse." The second -- called the "law of inheritance of acquired characteristics" -- proposed that physical characteristics acquired by "use" are passed on to offspring. These so-called "laws" are perhaps best illustrated by the popular example of the giraffe's neck. According to Lamarck, the giraffe once had a neck no longer than that of a zebra, but as the early giraffes stretched their necks to feed from the highest limbs of a tree, their necks got longer and longer (as a result of use based on need). This acquired trait was then presumably passed on to subsequent generations of giraffes who would be born with long necks.

It is now well known that the kind of physical characteristics we acquire by the use of our body, such as the development of large muscles through exercise, cannot be passed on to our offspring. This obvious fact was known even in Darwin's time. August Weissman actually bothered to test the "law" of the inheritance of acquired characters by cutting off the tails of 57 generations of mice. It should have surprised no one that even after bobbing the tails of 57 generations of mice, none were ever born without tails. Still, Darwin had no better explanation for genetic variability and was ambivalent about Lamarck's "laws," which he variously praised and condemned.

Today, evolutionists tell us a different legend of how the giraffe got its long neck. They relate how some giraffes just happened to develop long necks through a fortuitous string of chance mutations which had nothing to do with either need or use. Those giraffes with long necks just happened to find them beneficial as they were able to feed on the foliage of the taller trees, while those with shorter necks could not. This, according to evolutionary dogma, eventually resulted in the disappearance of giraffes with shorter necks who either died from starvation or as a result of their poor state of nutrition left fewer offspring. What this new legend doesn't explain, is how female giraffes have managed to survive given that their necks are on average about a foot shorter than those of the males. Still, for many evolutionists who reject the very idea of a supernatural Creator, the mere ability to conceive of such materialistic legends or scenarios appears to suffice as a "scientific" explanation.

While many of those who anticipated Darwin's ideas on evolution were atheists, anti-Christians, and even involved in the occult (like Alfred Russel Wallace), perhaps the unkindest cut of all for Darwin was that even some Creationists wrote in great detail about natural selection prior to his publication of *Origin of Species*. Indeed, Creationists such as the British theologian William Paley and the British chemist Edward Blyth had a far more scientifically-tenable view of the biological significance of natural selection than Darwin. Like other Creationists, both Paley and Blyth saw natural selection as a mechanism for eliminating unfit individuals which differed from the created type. Thus, while Darwin preferred to believe that the elimination of unfit individuals was a mechanism for somehow evolving new and improved species, the Creationists saw elimination of unfit individuals as mechanism to preserve the stability of existing Created kinds.

Readers may wish to compare the plausibility of the Creationist and evolutionist views of natural selection as follows: First, think of several actual examples from nature where a normal existing animal species is sustained by the elimination of abnormal individuals. No problem! Now, try to think of a single occurrence in nature where a fundamentally new and improved animal species has been formed by the elimination of the normal in favor of the abnormal. Darwin couldn't think of any either!

ESSAY 4: The Origin of Life

One of the most fundamental axioms of biology is that all life comes from pre-existing life. Still, until the later part of the 19th century, life was believed to arise from non-living matter by a process called "spontaneous generation." Ancient Egyptians, for example, thought mice arose from the mud of the Nile. In 1600, J. B. Helmont even reported "proof" for the spontaneous generation of mice claiming that if wheat, cheese, and soiled linen are placed together in a jar, mice will eventually appear! This idea of the spontaneous generation of life from non-life was so deeply ingrained in biological thought that it took nearly 200 years of experimental evidence to completely disprove it.

In 1650, Francesco Redi, an Italian physician, proved that maggots come from living flies and not from lifeless meat as was widely believed. This was a serious blow to spontaneous generation, but when bacteria were later discovered, it was thought that at least these microorganisms might arise from non-life. This notion too was finally laid to rest in 1864 by the great scientist (and creationist) Lewis Pasteur, who demonstrated that bacteria can only come from living bacteria. When Pasteur reported his results before the French Academy he confidently declared that, "never will the doctrine of spontaneous generation arise from this mortal blow." Pasteur never dreamed that the widely discredited evolutionary ideas of his contemporary, Charles Darwin, would one day become widely accepted by the scientific community, reviving once again the notion of spontaneous generation. In his book, *The Origins of Life*, evolutionist Cyril Ponnamperna said: "It is, perhaps, ironic that we tell beginning students in biology about Pasteur's experiments as the triumph of reason over mysticism yet we are coming back to spontaneous generation, albeit in a more refined and scientific sense, namely to chemical evolution." [Ponnamperna, 1972 #249]

Most evolutionists are quite certain that life evolved by chance (without divine intervention) from non-living chemicals through a process called "chemical evolution." Some evolutionists even insist that life must have independently evolved more than once on earth. Most evolutionists are confident that life has evolved many times in many other unknown places in the universe. Although Darwin spoke longingly of the chance origin of life from simple chemicals in some "warm little pond," there has never been evidence that anything remotely like this has ever happened. In fact, the evidence for chemical evolution is so embarrassing, some evolutionists insist that the whole idea of the origin of life is not even a part of the theory of evolution but rather is a creationist plot to discredit evolution!

Evolutionists speculate that life gradually evolved from mere hydrogen in a series of stages. The first stage began about 15 billion years ago with the "Big Bang" which produced an expanding cloud of hydrogen gas - all else was void. With time and energy, hydrogen transformed into all the other chemical elements. Then, about 4 billion years ago, the earth's atmosphere consisted of methane, ammonia, hydrogen and water, from which life would inevitably evolve.

During stage two it is believed that simple chemicals from stage one formed the small organic molecules essential to life such as sugars, amino acids and nucleotides. In 1953, Miller and Urey claimed to "simulate" the evolution of some of these organic molecules from methane and ammonia using apparatus and conditions designed to achieve their desired result.

Stage three in chemical evolution is supposed to have involved the stringing together of small organic molecules into long chain-like molecules called polymers. The most important biological polymers are starches (polymers of sugars), proteins (polymers of amino acids), and DNA (polymers of nucleotides). In another "evolution simulation" experiment, Sidney Fox produced protein-like molecules by heating pure- dry amino acids at high temperatures. When this material was allowed to cool in water it formed small globules which he called "microspheres." Although these microspheres are stone dead, evolutionists refer to them as "protocells,"

implying that they represent an early stage of living cells. In fact, about the only similarity between microspheres and living cells is they are, as their name implies, small and spherical.

The final stage of chemical evolution involves the chance transformation of organic molecules and polymers into the unfathomably complex machinery of living cells. Here evolutionary speculation is so unrestrained by evidence, or even plausibility, that it fails to merit serious consideration. The biochemist Dr. David Green pretty well summed it up when he said in his book *Molecular Insights into the Living Process*: "the macromolecule-to-cell transition is a jump of fantastic dimensions, which lies beyond the range of testable hypothesis. In this area all is conjecture. The available facts do not provide a basis for postulating that cells arose on this planet." [Green, 1967 #79] Evolutionists have tried to get around this problem by invoking long periods of time in the hope that, given enough time, virtually anything is possible - except, of course, special creation.

Now even some evolutionists fear that time and chance may not be the answer. The Nobel laureate Dr. Francis Crick (co-discoverer of DNA), in his book *Life Itself*, [Crick, 1981 #212] insists that the probability of life's chance origin simply defies calculation. Crick, an atheist, says: "What is so frustrating for our present purpose is that it seems almost impossible to give any numerical value to the probability of what seems a rather unlikely sequence of events....An honest man, armed with all the knowledge available to us now, could only state that in some sense, the origin of life appears at the moment to be almost a miracle.." Incredibly, Crick concludes that the first living organisms on earth may have been "seeded" in our oceans by intelligent beings from another planet!

Sir Fred Hoyle, the man who named the "Big Bang" theory, has recently concluded that the origin of life by chance is an absurd idea. In his book *Evolution From Space*, Hoyle insists that it is obvious that the complexity of life demands an intelligent designer, possibly even (heaven forbid!) God. According to Hoyle: "Once we see, however, that the probability of life originating at random is so utterly minuscule as to make it absurd, it becomes sensible to think that the favorable properties of physics on which life depends are in every respect deliberate. ... It is therefore almost inevitable that our own measure of intelligence must reflect... higher intelligences... even to the limit of God... such a theory is so obvious that one wonders why it is not widely accepted as being self-evident." [Hoyle, 1981 #32] In a recent address at Cal Tech, Hoyle said that no amount of time now being considered by evolutionists is even remotely adequate to accomplish the formation of a higher living organism by chance. Such an event, he said, would be comparable to the chance that "a tornado sweeping through a junk-yard might assemble a Boeing 747 from materials therein"! [Hoyle, 1981 #81]

Evolutionists, who must essentially invoke miracles without God, have no other choice than to believe in chance events so improbable they undermine the statistical foundation on which modern science rests. In his book *Origins: A Skeptic's Guide to Creation of Life on Earth*, evolutionist Robert Shapiro abandons all skepticism and lamely argues: "One escape hatch yet exists for spontaneous generation. Why need the event have been probable? We can just stare at the odds, shrug, and note with thanks how lucky we were... After all, improbable events occur all the time." [Shapiro, 1986 #185] Think of it, with an unquestioning faith like this in God, we Christians could move mountains!

ESSAY 5: There Ought to Be a Law Against Evolution -- And There is!

Perhaps the reason so many people continue to reject the notion of evolution is that it seems contrary to ordinary experience. Things left to chance just don't get done. Random changes in anything simply do not produce higher levels of organization and complexity. Rather, all complex machines and devices with which we are familiar are the result of intelligent design and manufacture. Random changes can only destroy them.

None the less, the essential claim of evolution is that random change and natural selection do make simple things spontaneously transform into more complex things without recourse to intelligent purpose or design. The famous evolutionist Julian Huxley has defined evolution as a "directional and essentially irreversible process occurring in time, which in its course gives rise to an increase of variety and an increasingly high level of organization in its products." In his book *Evolution in Action*, Huxley says that nowhere in the process of evolution "is there any trace of purpose, or even of prospective significance." Huxley says that evolution is driven solely by "blind physical forces" engaged in what he calls a great "chaotic jazz dance of particles and radiations."

Incredibly, Huxley concludes that evolution is a process in which "the only over-all tendency we have so far been able to detect is that summarized by the second law of thermodynamics - the tendency to run down." Now think about this - one of the most highly respected spokesman for evolution tells us that evolution produces an increasingly high level of organization in things by means of a chance process whose only over-all tendency is to cause things to break down!

The whole notion that random change over a long period of time can transform simple systems into ever more complex systems runs precisely contrary to one of the most fundamental laws of nature - the second law of thermodynamics. The Second Law states that with time, everything in the universe tends to undergo progressive degradation. With the passing of time, things do not naturally increase in order and complexity - they decrease. Think of what spontaneous change over say a thousand years will do to an automobile, or your own body. Scientists tell us that with enough time, this natural degradation process will lead to the "heat death" of the whole universe when virtually everything in nature will run down to the point that even molecular motion will cease!

Evolutionists have tried to get around this formidable obstacle by arguing that the Second Law only applies to closed systems that do not receive energy from the outside. The earth, they remind us, is an open system that receives energy from the sun. Evolutionists believe that as long as energy flows into such a system, simple things will just naturally transform into more complex things. They believe that the immense complexity we see in all the living things here on earth has occurred at the expense of our sun. While the sun is burning up, and thus decreasing its free energy and complexity in accordance with the Second Law, the sun's energy promotes a local increase in complexity here on earth.

To illustrate how all this is supposed to work, evolutionists often give simple examples such as the earth's water cycle. The Second Law predicts that in a closed system, water will naturally flow down hill and will not flow up hill. But the earth being an open system, receives energy from the sun which can in effect make water flow "up hill." Specifically, the sun's energy can evaporate water which has accumulated on the earth causing water vapor to rise up again into the atmosphere. Having made such a small investment in fact, evolutionists hope to gain a wholesale return by huge extrapolation. They would have us believe that just as a little energy from the sun can cause water to evaporate and go "up hill," so a lot of energy impacting on the earth over 4.5 billion years can cause a mixture of the gasses methane and ammonia to transform into people.

The evolutionist cannot get around the Second Law, as it applies to evolution, with such trivial examples. All observed cases in which complex things are derived from less complex things demand an already existing machine that is at least as complex as that which it produces. While this machine requires energy to do its work, energy by itself is not enough. Energy and raw materials, for example, are used in an automobile factory to make complex automobiles, but nothing would come of these resources were it not for the even more complex machines, designs, and intelligent workers associated with the factory.

Like factories, living animals and their cells are comprised of extraordinarily complex machines that use energy and raw material in the form of food to do work, produce complex products, and even make identical copies of themselves. The food that sustains life is ultimately a product of living green plants. Such plants use energy from the sun to convert water and carbon dioxide into sugar and starch. This process, known as photosynthesis, involves still other complex machines called chloroplasts in the cells of green plants.

It is important to emphasize that the different kinds of energy consuming machinery in living cells are not the chance products of mere energy and raw material, but are constructed according to extraordinarily complex and precise "blueprints" in the genes of each cell. Copies of these "blueprints" are read and implemented by still other complex machines in the cell called ribosomes. When all of this genetic information and machinery is present and working properly in say an acorn, it has everything it needs to use sunlight and simple raw material to grow into an oak tree. But if the same sunlight shines on a dead oak tree, it will eventually break it down into dust.

Creationists are convinced then that there is a law against the theory of evolution - the second law of thermodynamics. Evolutionists, on the other hand, continue to reject the idea that thermodynamics is in any way incompatible with evolutionary theory. They insist that creationists simply don't understand thermodynamics. But the great physical scientist Lord Kelvin, who was the very founder of the second law of thermodynamics, was a Bible-believing Christian and a creationist! Kelvin, a contemporary of Charles Darwin, was convinced that the science of dynamics was incompatible with evolution. In one of his published lectures, Kelvin said: "I need scarcely say that the beginning and maintenance of life on earth is absolutely and infinitely beyond the range of all sound speculation in dynamical science. The only contribution of dynamics to theoretical biology is absolute negation of automatic commencement or automatic maintenance of life."

The Bible tells us that "every house is built by someone, but God is the builder of everything" (Heb. 3:4). It requires less faith to believe this eminently reasonable statement about the origin of complex things as revealed in the sure Word of God than it does to believe in the unreasonable speculations of men.

ESSAY 6: Is Evolution a Theory, A Fact, Or A Law? - Or, None Of The Above?

I have heard many Christians say that evolution doesn't concern them because, after all, it's "only a theory." Presumably they think that the word "theory" means about the same thing as a "pipe dream." But the term theory, at least as it applies to experimental science, has a much nobler meaning than that. A scientific theory is a careful attempt to explain certain observable facts of nature by means of experiments. Since many Christians have concluded that evolution is incompatible with the Biblical account of creation, we would do well to investigate if evolution is a fact or a theory - or perhaps neither.

There is a widespread misconception that good theories grow up to be facts and that the really good ones finally become laws. But these three categories of scientific description are neither directly related nor mutually exclusive. It often occurs that a single natural phenomenon can be described in terms of a theory, a fact, and a law - all at the same time!

Consider the well-known phenomenon of gravity. First, there is a fact of gravity. While we cannot actually see gravitational force itself, we do observe the effects of this force every time we drop something. There is also a theory of gravity that addresses the question of how this force we call gravity really works. While we don't know how gravity works, there are theories that attempt to explain it. Finally there is the well-known law of gravity. This law, first formulated by Isaac Newton, a Bible-believing Christian and creationist, is a mathematical equation that shows a relationship between mass, distance and gravitational force. So, in summary, a scientific fact is an observable natural occurrence; a scientific theory is an attempt to explain how a natural occurrence works; and a scientific law is a mathematical description of a natural occurrence.

Science itself is the whole process of making careful observations of certain facts of nature and then constructing and testing theories that seek to explain those facts. Scientists call these attempts to test their theories experiments. Experimental science, better known as empirical science, is the kind of science that is responsible for the marvelous technological achievements that make our life easier. One has only to consider what it would be like to endure surgery without anesthesia (discovered by the creationist Sir James Simpson) to appreciate the contributions of empirical science to our lives.

The most important requirement of empirical science is that any object or phenomenon we wish to study must first be observable. While we may assume the existence of events not witnessed by human observers, such events are not suited to study by empirical science. Secondly, the event we wish to study should be repeatable. Unique and unrepeatable events, such as the Babylonian Empire, are the subject of history, not empirical science. Finally, any theory we might propose as an explanation for an observable and repeatable event must be testable: we must be able to conceive of an experiment that could refute our theory if it were wrong. If one were to propose an explanation for an event in such a way that no one could conceive of any way to test or refute it, it wouldn't be a theory at all, but rather a belief. Beliefs, of course, are not necessarily wrong, they just aren't well suited to study by empirical science.

What then shall we say of evolution? First, evolutionists tell us that major evolutionary changes happen far too slowly, or too rarely, to be observable in the lifetime of human observers. The offspring of most living organisms, for example, are said to remain largely unchanged for tens of thousands, or even millions, of years. Second, even when evolutionary changes do occur, evolutionist Theodosius Dobzhansky tells us they are by nature "unique, unrepeatable, and irreversible." Dobzhansky concludes that the "applicability of the experimental method to the study of such unique historical processes is severely restricted. [Dobzhansky, 1957 #8]" Finally, evolutionist Paul Ehrlich [Ehrlich, 1967 #7] concedes that the theory of evolution "cannot be refuted by any possible observations" and thus is "outside of empirical science."

Still, the occurrence of evolution is widely believed by the scientific community to be a "fact" and those who dare to doubt it are not endured gladly. The Encyclopedia Britannica confidently assures us that "we are not in the least doubt as to the fact of evolution." In his textbook *Evolution*, J. Savage says "we do not need a listing of the evidences to demonstrate the fact of evolution any more than we need to demonstrate the existence of mountain ranges. [Savage, 1965 #252]" In another textbook, *Outlines of General Zoology*, H. Newman arrogantly declares that evolution has no rival as an explanation for the origin of everything "except the outworn and completely refuted one of special creation, now retained only by the ignorant, the dogmatic, and the prejudicial. [Newman, 1924 #253]"

What exactly is the "observable fact" of evolution? First you should be aware that evolutionists recognize two types of "evolution" - microevolution, which is observable, and macroevolution, which isn't. So called "microevolution" is a process of limited variation among the individuals of a given species that produces the sort of variety we observe among dogs. Macroevolution, on the other hand, is a hypothetical process of unlimited variation that evolutionists believe transforms one kind of living organism into a fundamentally different kind such as the transformation of reptiles into birds or apes into people. Obviously, no one has ever observed anything remotely like this transformation.

The very name "microevolution" is intended to imply that it is this kind of variation that accumulates to produce macroevolution, though a growing number of evolutionists admit there is no evidence to support this. Thus, an observable phenomenon is extrapolated into an unobservable phenomenon for which there is no evidence, and then the latter is declared to be a "fact" on the strength of the former. It is this kind of limitless extrapolation that comprises much of the argument for evolution.

In conclusion, macroevolution is not observable, repeatable, or refutable and thus does not qualify as either a scientific fact or theory. Evolution must be accepted with faith by its believers, many of whom deny the existence, or at least the power, of the Creator. Similarly, the Biblical account of creation is not observable, repeatable or refutable by man. Special creation is accepted with faith by those who believe that the Bible is the revelation of an omnipotent and omniscient Creator whose Word is more reliable than the speculations of men. Both evolution and creation, however, can be compared for their compatibility with what we do observe of the facts of nature. It seems self evident that creation by intelligent design is a vastly more reasonable explanation for the origin of the complexity we see in living things than is evolution by mere chance and the intrinsic properties of matter.

ESSAY 7: If We Resemble Apes, Does That Mean We Evolved From Apes?

Anyone who has ever watched the monkeys and apes at the zoo, couldn't help but notice their resemblance to humans. By comparison, the bears in the zoo are not nearly as similar to humans as are the apes. Still, bears are warm-blooded mammals and thus are more similar to humans than are cold-blooded reptiles like the alligators. Alligators, however, do have legs and true lungs and thus are more similar to humans than are the fish. But even fish have bony vertebrae and thus are more similar to humans than are the insects. And even insects are made up of many specialized cells and thus are more similar to humans than are the bacteria. Finally, all living things, including bacteria, have basically the same type of molecules that appear to be essential for life itself and share a common genetic code mechanism for their reproduction.

Clearly there is an underlying common theme to all of life. Inquisitive people will naturally wonder why this is so. Until the time of Darwin, over 230 years ago, most scientists considered the underlying commonality of all living animals to be evidence of the handiwork of their common Creator. It seemed quite reasonable to these great pioneers who established the foundations of nearly every branch of science, that God would use the same underlying principles to design and create the various kinds of animals. After all, even human designers, builders and artists, tend to manifest their distinctive approach in everything they create and build.

There are several possible reasons why certain animals are more similar to one another than they are to others, permitting them to be arranged into groups. Animals that live in a similar environment and eat similar food would be expected to have structural and even chemical similarities. Animals that live and move on land, for example, have a certain class of similarities based on the restrictions imposed by the natural terrain of our earth. Animals that live and swim in water have certain similarities necessary for aquatic locomotion and feeding. Animals that fly in the air have still other similarities dictated by the severe demands of flight. In the same manner, man-made machines designed to serve a common type of purpose share common features, despite their many differences. Consider the various modes of transportation designed by man. Most vehicles that run on land, from roller skates to freight trains, share a class of similarities based on wheels. Vehicles that move on water, from a canoe to a battle ship, share basic similarities based on floatation. Vehicles that fly in the air, from hang gliders to the space shuttle, have similarities that are essential to flight.

Today, evolutionists insist that the underlying similarity of all animals, including man, and our ability to arrange and classify them into groups, is compelling evidence for their progressive evolution from a common ancestor. They insist that there is simply no other thinkable explanation for their similarities. Evolutionists argue further that the degree of similarity between any two animals attests to their degree of evolutionary "relatedness," and thus how recently they separated from a common ancestor. They are quite certain, for example, that the similarities between apes and humans prove they evolved from a common ape-like ancestor only 2 or 3 million years ago. By comparison, evolutionists say we are far more distantly related to our "insect" relatives." The Living World Exhibit at the St. Louis Zoo has a sign by a dish of fruit flies that confidently declares: "humans and flies had a common ancestor 630 million years ago." This hypothetical "common ancestor" is not identified because no one has the slightest evidence of what it looked like, or even if it existed at all!

This belief that similarities between animals can only be understood in terms of an evolutionary relationship is the most fundamental axiom of evolution - almost all arguments for evolution depend upon it. Evolutionists do not feel compelled to prove their claim that similarity necessarily means common evolutionary ancestry - they assume it. Indeed, evolutionists never question or investigate whether evolution is true or not, rather they ask which animal evolved into which, and their answer is generally based on similarity! No scientist would ever succeed in getting funding from major federal or private sources to investigate if evolution has really

occurred or not. The evolutionist Richard Leaky approached the National Geographic Society to get funding to look for the ape ancestors of man, not to investigate if man evolved from apes. It is interesting to note that when the Society gave Leaky his funds, he was warned: "If you find nothing you are never to come begging at our door again." With this motivation, Leaky soon found 40 specimens of the "human ancestor," Australopithecus, whose very name, by the way, means "Southern APE!" Most evolutionists are certain that this very ape-like ape evolved into man because of certain arguable similarities to man in its teeth, knee joint and pelvic bones. Perhaps you heard the story of the evolutionist who dug up a fossilized fragment of an ape's jaw and promptly declared it to be an ancestor of man - he was so excited about the find he said, "I wouldn't have seen it if I hadn't believed it."

One of the problems with the similarity = evolutionary ancestry axiom is that evolutionists ignore it whenever it doesn't fit their evolutionary scenarios. There are many instances of remarkable similarities between animals that evolutionists consider to be only distantly related. The eye of the squid, for example, is strikingly similar to the human eye. Sometimes almost the whole body and even the behavior of animals are obviously similar and still evolutionists argue they are not closely related! For example, many of the Australian marsupials have strikingly similar counterparts to certain North American placental mammals. There are both marsupial and placental versions of mice, moles, rabbits, wolves, and badgers. Some even suggest that there once were both marsupial and placental saber-toothed tigers! Yet evolutionists consider marsupials and placental mammals to be only distantly related because their mechanism of reproduction is so fundamentally different. Evolutionists believe that the primitive ancestors of marsupial and placental mammals split off from a hypothetical common ancestor about 120 million years ago, long before there were mice, moles, rabbits, wolves, and badgers, and have been evolving separately ever since. How then did both these separate lines manage to come up with such similar animals?

Incredibly, evolutionists explain away amazing similarities between animals they consider to be only distantly related by simply invoking "convergent evolution." Convergent evolution is the unobserved and unexplained process whereby two very different animals independently evolve into two very similar animals by an incredible run of countless lucky mutational coincidences extending over tens of millions of years! It seems that some folks will believe almost anything, as long as it doesn't appear in the Bible.

ESSAY 8: Is The Human Embryo Essentially A Fish With Gills?

Almost from the beginning, evolutionists have attempted to equate the process of evolution with the progressive development of the embryo. During the famous Scopes "Monkey Trial" in 1925, for example, lawyers and expert witnesses defending teaching Darwinism in public schools, repeatedly confused evolution with embryology. The lawyers even insisted that evolution must be taught if physicians are to understand the development of babies in the womb! The very word "evolution" (which means "unfolding"), was taken from the name of an early theory of embryonic development which proposed that humans are completely preformed in miniature in the fertilized egg, simply "unfolding" during the development of the baby. Obviously, the blind-chance process of Darwinian "evolution" has nothing whatever to do with the exquisitely-controlled process of embryological development. Still, evolutionists have long attempted to relate embryology to evolution, presumably in an effort to extrapolate the readily-observable process of embryonic development into the unobservable process of macroevolution. Embryology continues to play a role in current evolutionary dogma. Generations of students have been told, for example, that the human embryo developing in the womb passes through stages of its evolutionary ancestry - even at one point having gills like a fish!

Like most students of biology, I was required to memorize the "biogenetic law" which states that "ontogeny recapitulates phylogeny." This means that the developing embryo (ontogeny) of each vertebrate species retraces (recapitulates) its evolutionary history (phylogeny). Specifically, each embryo in the course of its development, is said to pass through a progression of abbreviated stages that resemble the main evolutionary stages of its presumed ancestors. Thus, in the case of the human embryo, the recapitulation scenario goes something like this: 1: The fertilized egg starts as a single cell (just like our first living evolutionary "ancestor"); 2: As the fertilized egg repeatedly divides it develops into an embryo with a segmented arrangement (the "worm" stage). 3: These segments develop into vertebrae, muscles and something that sort of looks like gills (the "fish" stage); 4: Limb buds develop with paddle-like hands and feet, and there appears to be a "tail" (the "amphibian" stage); 5: By about the eighth week of development, most organs are nearly complete, the limbs develop fingers and toes, and the "tail" disappears (the human stage). Now the mother can finally claim the baby as her own, or at least one of her own species. This ludicrous scenario has actually been used as a justification for abortion - after all you are only killing lower animals!

The "biogenetic law" was first promulgated in the late 1800's by the German biologist Ernst Haeckel, a committed disciple of Darwin. Impressed by the general similarity among vertebrate embryos, Haeckel chose to ignore their differences. Haeckel was a scientific charlatan who even stooped to publishing two copies of the same woodcut side by side to demonstrate the "remarkable similarity" between human and dog embryos! Haeckel's "law" was shown to be unsound by many of the most distinguished embryologists of his own day, but its appeal to evolutionists was so great that it remained impervious to scientific criticism. In her book *Essays in the History of Embryology and Biology* (MIT Press, 1967 p. 150), Jane Oppenheimer said that the work of Haeckel "was the culmination of the extremes of exaggeration which followed Darwin." She lamented that "Haeckel's doctrines were blindly and uncritically accepted," and "delayed the course of embryological progress." Embryologist Erich Blechschmidt, considered Haeckel's biogenetic "law" to be one of the most serious errors in the history of biology. In his book *The Beginnings of Human Life* (Springer-Verlag Inc., 1977, p. 32), Blechschmidt minced no words in repudiating Haeckel's "law": "The so-called basic law of biogenetics is wrong. No buts or ifs can mitigate this fact. It is not even a tiny bit correct or correct in a different form. It is totally wrong." We could ignore this whole sorry chapter in the history of evolutionism, were it not for the fact that the biogenetic "law" is still being taught as a fact in our public schools! Of 15 high school biology textbooks being considered for adoption by the Indiana State Board of Education in 1980, nine offered embryological recapitulation as evidence for evolution.

Evolutionists themselves have conceded that the biogenetic "law" has become so deeply rooted in evolutionary dogma that it cannot be weeded out. For example, Paul Ehrlich said "it's shortcomings have been almost universally pointed out by modern authors, but the idea still has a prominent place in biological mythology" (*The Process of Evolution*, 1963, p. 66). Even Dr. Benjamin Spock saw fit to perpetuate Haeckel's recapitulation myth in his well-known book, *Baby and Child Care* (Cardinal Giant Edition, 1957 p. 223). Spock confidently assured expectant mothers that "each child as he develops is retracing the whole history of mankind, physically and spiritually [sic], step by step. A baby starts off in the womb as a single tiny cell, just the way the first living thing appeared in the ocean. Weeks later, as he lies in the amniotic fluid of the womb, he has gills like a fish."

It is a well-established fact that the human embryo (like all mammalian embryos) never has gills in any sense of the word. The fanciful notion of gills is based upon the presence of four alternating ridges and grooves in the neck region of the human embryo (called pharyngeal arches and pouches) that bear a superficial resemblance to gills. While similar arches do give rise to gills in certain aquatic vertebrates such as fish, their developmental fate in mammals has nothing to do with gills or even breathing. In man and other mammals, these arches and pouches develop into part of the face, muscles of mastication and facial expression, bones of the middle ear, and endocrine glands.

The embryological development of the heart has been another popular textbook example of embryonic recapitulation, and thus "proof" of evolution. Evolutionists argue that as the human heart develops, it goes from a two-chambered "fish heart," to a three-chambered "amphibian heart" and, finally, forms the four-chambered mammalian heart. In his book *Comparative Anatomy and Embryology* (Ronald Press, 1964, p. 509), William Ballard said "no false biological statement has had a longer or more popular life than the one about the ontogeny of the four-chambered heart." Ballard pointed out that "in real life, all vertebrate hearts are composed of the same four chambers at the pharyngula stage." As the heart develops, these four chambers become specialized in different ways which are uniquely suited to the demands of aquatic, amphibious or terrestrial life.

Embryologists are now aware that the embryos of each species of animal are unique and dynamically functional systems. The human embryo does not become human at some point during its development, rather it is uniquely human at every stage of its development. While scientists continue to learn much about the marvelous process of development in the embryo, the inspired words of King Solomon (Ecclesiastes 11:5) remain true: "As you do not know the path of the wind, or how the body is formed in a mother's womb, so you cannot understand the work of God, the Maker of all things."

ESSAY 9: The Human Tail, and Other Tales of Evolution

In the May 20, 1982 issue of The New England Journal of Medicine, Dr. Fred Ledley, M. D. presented a clinical case report titled "Evolution and the Human Tail." Ledley's report concerned a baby born with a two inch long fleshy growth on it's back, bearing a superficial resemblance to a tail. Ledley strongly implied that this growth (called a caudal appendage) was essentially a "human tail," though he admitted that it had virtually none of the distinctive biological characteristics of a tail!

All true tails have bones in them that are a posterior extension of the vertebral column. Also, all true tails have muscles associated with their vertebrae which permit some movement of the tail. Ledley conceded that there has never been a single documented case of an animal tail lacking these distinctive features, nor has there been a single case of a human caudal appendage having any of these features. In fact, the caudal appendage Ledley described is merely a fatty outgrowth of skin that wasn't even located in the right place on the back to be a tail! Still, Ledley saw his caudal appendage as providing compelling proof for the evolution of man from our monkey-like ancestors. He said that "even those of us who are familiar with the literature that defined our place in nature (Darwinism) - are rarely confronted with the relation between human beings and their primitive ancestors on a daily basis. The caudal appendage brings this reality to the fore and makes it tangible and inescapable." Is there any branch of science where such trivial data can be extrapolated into such profound and "inescapable" facts?

The "human tail" is just one example of what evolutionists call a "vestigial organ." As the name suggests, these organs are supposed to represent useless remnants of what were once functional and useful organs in our primitive ancestors. As recently as 1971, the Encyclopedia Britannica claimed that there were more than 100 vestigial organs in man. Even critically important organs such as the thymus and parathyroid glands were once considered to be vestigial simply because their functions were not understood. As biomedical science has progressed, there are fewer and fewer claims of functionless organs. Despite their diminishing numbers, vestigial organs are still mentioned in textbooks as one of the strongest evidences for evolution and against intelligent design by a Creator. The most frequently sighted examples of vestigial organs in man are the coccyx and the appendix.

The human coccyx, or "tail bone," is a group of four or five small vertebrae fused into one bone at the lower end of our vertebral column. Most of us never really think about our "tail bone" until we fall on it. Evolutionists are certain that the coccyx is a vestige of a tail left over from our monkey-like ancestors. The coccyx does occupy the same relative position at the end of our vertebral column as does the tail in tailed primates, but then, where else would it be? The vertebral column is a linear row of bones that supports the head at its beginning and it must end somewhere. Where ever it ends, evolutionists will be sure to call it a vestigial tail.

Many modern biology textbooks give the erroneous impression that the human coccyx has no real function other than to remind us of the "inescapable fact" of evolution. In fact, the coccyx has some very important functions. Several muscles converge from the ring-like arrangement of the pelvic (hip) bones to anchor on the coccyx, forming a bowl-shaped muscular floor of the pelvis called the pelvic diaphragm. The incurved coccyx with its attached pelvic diaphragm keeps the many organs in our abdominal and pelvic cavities from literally falling through between our legs. Some of the pelvic diaphragm muscles are also important in controlling the elimination of waste from our body through the rectum.

Another common evolutionary claim found in textbooks is that the human appendix is really a vestigial cecum left over from our plant-eating evolutionary ancestors. The cecum is a blind-ending pouch near the beginning of the large intestine which provides additional space for digestion. In some plant-eating animals, such as cows, the cecum contains special bacteria which aid in the digestion of cellulose. The appendix is clearly not a vestigial cecum because

almost every mammal has a cecum and many of these also have an appendix! Man, for example, has both a cecum and an appendix - neither is vestigial or useless. The appendix, like the once "vestigial" tonsils and adenoids, is a lymphoid organ (part of the body's immune system) which makes antibodies against infections in the digestive system. Believing it to be a useless evolutionary "left over," many surgeons once removed even the healthy appendix whenever they were in the abdominal cavity. Today, removal of a healthy appendix under most circumstances would be considered medical malpractice.

There are organs in the body which have no known function in the adult but are still not vestigial in the evolutionary sense. For example, poorly developed and inactive mammary glands are found in adult males of all mammals, including man. Even evolutionists do not believe that these rudimentary glands are vestigial mammary glands left over from female ancestors of males, nor do they believe that males once nursed their young. There is a much better explanation for the male mammary gland. Males and females develop from nearly identical embryos which, at an early stage of development, become either male or female under the influence of genes in the sex chromosomes. The same parts of an embryo may produce either male or female sex organs and mammary glands. In humans, almost every component of female sex organs can be found in a rudimentary form in the male; and the reverse is also true. Thus, the presence of rudimentary organs in the adult do not tell us something about evolution, but rather tell us something about embryology.

In conclusion, the "vestigial" status of many organs has often been merely a way of covering up our ignorance of their true function. Unfortunately, there is little inclination to investigate the functional significance of organs believed to be "useless." There are now few, if any, organs that are considered to be functionless in both embryo and adult. Even if vestigial organs were to exist they would not provide evidence for evolution but rather for devolution. The problem for evolutionists is not how useful organs are lost, but how evolution produces new useful organs with all their integrated complexity. It is here that we find true evolutionary tales!

ESSAY 10: Natural Selection And Macroevolution

Darwin's only observable evidence for "evolution in action" was the great variation that occurs within species of animals and plants under domestication. Darwin, who knew nothing of genetics, assumed that there was virtually no limit to this variation among the individuals of a species, though any breeder could have told him otherwise. In the first edition of his book *On the Origin of Species*, Darwin said that he had no difficulty imagining a race of bears entering the water to catch fish and then slowly developing wider mouths, shorter legs, and longer tails, until they evolved by chance into the great whales. Thus, Darwin extrapolated the observable but limited variation, that occurs among the individuals of a species, into the unobservable evolution of fundamentally new animals.

Darwin reasoned that if pigeons and dogs can be selectively bred by man to produce certain desired traits, then nature itself can select for limitless traits by a process called natural selection. While breeders use intelligence to select for desired traits (such as physical appearance or strength), nature, in Darwin's view, selects for those traits that promote survival itself. Since evolution selects by the simple expedient of life and death, without death there could be no evolution. On a recent Phil Donahue show, the well-known evolutionist Carl Sagan said that it took "lots of deaths in order to get us to where we are now. The secrets of evolution are time and death."

Darwin saw nature as a very hostile place where there was an overproduction of animals and a limited supply of food. He believed this led to a bloody struggle for existence among animals in which only the most fit survive. Thus, natural selection came to be defined as survival of the fittest. One of the problems with this "explanation" is that it is a tautology. A tautology is a circular statement such as "deafness causes loss of hearing" - while true, it adds nothing to our understanding. Which animals survive? - why, those that are fit. What do we mean by "fit"? - why, those that survive!

The classical Darwinian view of natural selection as survival of the fittest was later modified to mean differential reproduction. This interpretation of natural selection became popular in the 1950's under the name of neodarwinism. In the neodarwinian view, nature does not merely select for animals that survive, but for animals that leave the most offspring. Think this one through - according to Darwin the reason we are supposed to have evolution in the first place is that animals leave too many offspring, and there isn't enough food to feed them. Now we are told by neodarwinists that the animals that leave the most offspring insure the continued survival of their species. Ironically, neodarwinists (like Paul Ehrlich), stridently insist that we humans must severely limit the number of our offspring if our species is to survive!

Almost all biology textbooks give the example of the peppered moth as observable evidence of natural selection. Peppered moths of the species *Biston betularia* range in color from mostly white with a peppering of black specks to nearly all black. At one time, the lighter colored moths of this species were the most numerous because they blended in with the light-colored bark of the trees they favored, and thus, were nearly invisible to their bird predators. Several years ago, air pollution darkened the bark of these trees causing the lighter moths to stand out, thus exposing them to the birds. Naturally, the birds ate the more visible white variety, leaving behind mostly the darker variety of the species which lay hidden on the soot-darkened trees. To the evolutionist, this is observable evidence of evolution in action! But while the peppered moths are clearly an example of natural selection, they do not show the evolution of a fundamentally new kind of animal, or even a new species of moth.

Evolutionists like to refer to the sort of variation we see among individuals of a species as microevolution, implying that this is somehow related to the chance formation of fundamentally new animals by a process known as macroevolution. There is, in fact, no known relationship between so-called microevolution and macroevolution. Most evolutionists are quite aware of

this (although you would never guess it from the explanations of evolution in the media, textbooks, and in the classroom). A report in the journal *Science* (vol. 210, pp. 883-887) on a recent macroevolution conference held at the Field Museum of Natural History in Chicago, summarized the views of participating evolutionists as follows: "The central question of the Chicago Conference was whether the mechanisms of microevolution could be extrapolated to explain the phenomenon of macroevolution. At the expense of doing violence to the positions of some people at the meeting, the answer can be given as a clear NO." If this conclusion alone was shared with students in our schools, it would go a long way toward addressing the concern that evolution be critically evaluated in the classroom, rather than dogmatically indoctrinated.

One of the great achievements of modern science is the discovery of how it is possible for animals of the same species to show an immense range of variation without changing into completely different kinds of animals. Genetic analysis shows that the individuals of a species do not share an identical set of genes, but rather have a small number of alternative versions of many genes called alleles. Only clones have the same genes and are essentially identical - including the same sex. It would be a boring (and short-lived!) world if all the individuals of a species were identical clones of one another. The fact that each individual inherits allelic versions of genes from both parents insures that no two individuals will be exactly alike. Thus, we say that all the individuals of a species comprises a gene pool from which selection (either artificial or natural), can select. The important point is that we cannot select for genes that are not already in the gene pool of the species.

Consider the remarkable species *Canis familiaris*, which includes nearly 150 varieties of dogs recognized by the American Kennel Club. Dogs as different as a 125 pound St. Bernard and a 3 pound Chihuahua are all the same species of animal! Still, there are limits to what can be achieved by dog breeders. They can breed for long legs and short legs (within limits), but they can't breed for a flying dog with wings. The reason for this is simple - there are no genes in the entire gene pool of the species *Canis familiaris* that would produce wings, or any of the other countless specializations necessary for flight. For this, the evolutionist must look to mutations, their most ludicrous mechanism of all.

ESSAY 11: Sickle Cell Anemia And Other "Good" Mutations Of Evolution

The marvelous ability of all living things to reproduce themselves after their kind is one of the most distinctive properties of life. This reproductive ability depends in part on a vast collection of precise genetic instructions, called genes (about 100,000 in humans), that reside in every cell of each living organism. It is believed that these genes provide the instructions necessary for not only the assembly and function of each cell, but also for all the organs and even the entire body! A complete set of these instructions is stored in the chromosomes, inside the nucleus of the cell.

The survival of every living species depends on its ability to pass on its precious genetic instructions, from generation to generation, without significant alteration. First, all of the genetic instructions must be precisely duplicated and passed on by the germ cells to enable the birth of each new individual. Then, from the very first cell of a new individual (a fertilized egg), the genetic instructions must be accurately duplicated for the subsequent production of every cell that makes up the whole organism - about 30 trillion cells (of several hundred different kinds) in the case of our own body! This process must continue throughout life in order to support growth and repair, as well as to replace cells that are continually dying. The red blood cells of our body, for example, are being produced at the rate of about two million per second, to replace older cells which are dying at the same rate!

If a species is to survive, the frequent duplication of its genetic instructions must occur with great precision. There are, in fact, several error-checking mechanisms in living cells that help to ensure the accuracy of their gene duplication. But even if copy errors are avoided, errors can still occur when the cell is not dividing or reproducing. We call such errors that creep into the genetic instructions of a cell mutations. There are several kinds of chemicals, viruses and radiations that are known to cause mutations. Ultra violet light from the sun, for example, can cause mutations in our skin, resulting in a benign form of skin cancer called basal cell carcinoma. Cancer is so closely associated with mutations that the terms carcinogenic (cancer-causing) and mutagenic (mutation-causing) are essentially synonymous. None the less, evolutionists insist that some mutations are beneficial and lead to the gradual improvement of a species!

Chance mutations amount to random changes in the highly complex and integrated genetic instructions of the cell. Such changes would be no more likely to improve a living cell (or organism) than would a random interchange of connections in a television set be likely to improve the picture. Although some mutations have no noticeable effect, many are harmful and even fatal. Mutations are so harmful, in fact, that the very survival of all living organisms (from bacteria to man) depends on a complex biochemical mechanism in each cell that identifies mutations as they occur - and repairs them! This marvelous mutation repair mechanism involves an integrated sequence of special enzymes that actually cut out the erroneous (mutant) parts of each gene, and then splice in correct patches. The whole field of "genetic engineering" is based on the discovery, and use, of these naturally occurring "cutting" and "splicing" enzymes.

The importance of mutation repair to human life can be appreciated by examining what happens when it doesn't work properly. There is a human disease called xeroderma pigmentosum, which results from a single defect (itself a mutation) in the complex mutation repair process. This is a hereditary disease, in which the skin and other tissues react in a hypersensitive way to any form of radiant energy. When people suffering from this disorder are exposed to sun light or x-rays, for example, they develop progressive degenerative changes (more mutations) which lead to cancer, including the often fatal malignant melanoma.

Regrettably, some mutations manage to escape even the normally functioning repair process, and these accumulate throughout life. Some scientists have proposed that aging and death are the result of such unrepaired mutations. It is hard to imagine that anyone could find something good to say about unrepaired mutations - except evolutionists. Evolutionists, you see, believe

that mutations (and indeed death itself) are absolutely essential for the chance evolution of all living organisms, including man! The reason for this, as evolutionist Theodosius Dobzhansky points out, is that "the process of mutation is the only known source of the new materials of genetic variability, and hence evolution (American Scientist 45:385)." Thus evolutionist Carl Sagan could say in his book, *The Cosmic Connection*, "we (humans) are the products of a long series of biological accidents."

Are biological accidents (mutations) up to the task that evolutionists claim for them? Are there any known examples of unquestionably "beneficial" mutations? Ironically, the primary textbook example of a "good" mutation is one that causes the disease sickle cell anemia! This mutation of blood hemoglobin is considered "good" because people who have it (and survive it!) are more resistant to the disease malaria. The symptoms of this "good" mutation include: acute attacks of abdominal and joint pain, ulcers on the legs, defective red blood cells, and severe anemia - often leading to death. One can only imagine what the "bad" mutations are like! No wonder that H. J. Mueller, who won the Nobel prize for his work on mutations, said: "It is entirely in line with the accidental nature of mutations that extensive tests have agreed in showing the vast majority of them detrimental to the organism in its job of surviving and reproducing - good ones are so rare we can consider them all bad (Bulletin of the Atomic Scientists 11:331)."

The unquestioning faith of evolutionists in the occurrence and beneficial effects of "good" mutations is sustained despite overwhelming evidence against it. In his book *Genetics and the Origin of Species*, Dobzhansky admits that mutations arising both in the laboratory and in natural populations typically produce deterioration, disease, and monstrosities. He even concedes that "such changes it would seem, can hardly serve as evolutionary building blocks." Yet in his book *Mankind Evolving*, Dobzhansky insists that, "This is not inconsistent with the recognition that useful mutations did occur in the evolutionary line which produced man, for otherwise obviously, mankind would not be here." Such child-like and unquestioning faith is not found in all of Christendom.

Think about it, chance mutations or intelligent design, - which explanation of the origin of the incredible complexity of life requires the greater faith?

ESSAY 12: Can Evolution Produce An Eye? Not A Chance!

The human brain consists of approximately 12 billion cells, forming 120 trillion interconnections. The light sensitive retina of the eye (which is really part of the brain) contains over 10 million photoreceptor cells. These cells capture the light pattern formed by the lens and convert it into complex electrical signals, which are then sent to a special area of the brain where they are transformed into the sensation we call vision.

In an article in Byte magazine (April 1985), John Stevens compares the signal processing ability of the cells in the retina with that of the most sophisticated computer designed by man, the Cray supercomputer: "While today's digital hardware is extremely impressive, it is clear that the human retina's real-time performance goes unchallenged. Actually, to simulate 10 milliseconds (one hundredth of a second) of the complete processing of even a single nerve cell from the retina would require the solution of about 500 simultaneous nonlinear differential equations 100 times and would take at least several minutes of processing time on a Cray supercomputer. Keeping in mind that there are 10 million or more such cells interacting with each other in complex ways, it would take a minimum of 100 years of Cray time to simulate what takes place in your eye many times every second."

If a supercomputer is obviously the product of intelligent design, how much more obviously is the eye a product of intelligent design? And yet, evolutionists are dead certain that the human eye (and everything else in nature) came into being by pure chance and the intrinsic properties of nature! Evolutionists occasionally admit that it is difficult for even them to believe such a thing. Ernst Mayer, for example, has conceded that "it is a considerable strain on one's credulity to assume that finely balanced systems such as certain sense organs (the eye of vertebrates) could be improved by random mutations" (Systematics and the Origin of Species, p. 296).

Evolutionists rarely attempt to calculate the probability of chance occurrence in their imagined evolutionary scenarios. While there is no way to measure the probability of chance occurrence of something as complex as the eye, there are ways to calculate the probability of the chance occurrence of individual protein molecules that are essential to life. Over a thousand different kinds of proteins have been identified in the human body, and each has a unique chemical composition necessary for its own particular function.

Proteins are polymers, whose chemical composition depends on the arrangement of many smaller subunits called amino acids. There are 20 different kinds of amino acids that are used to construct the proteins of all living organisms, including man. These amino acids are linked together end-to-end (like a string of beads) to form a single protein macromolecule. The average protein consists of a string of 500 amino acids. The total number of combinations of 20 different amino acids in such a string is, for all practical purposes, unlimited. Each protein in our body, however, must contain a specific sequence of amino acids if it is to function properly. It is the task of the genetic system in our cells to organize the assembly of the amino acids into precisely the right sequence for each protein.

Proteins have been called informational macromolecules because their amino acid sequence spells out information, in much the same way as the letters of the alphabet can be arranged to form a sentence or paragraph. We can appreciate the improbability of randomly assembling one of the essential proteins of life by considering the probability of randomly assembling the letters of the alphabet to form even a simple phrase in English.

Imagine if we were to try to spell out the 23 letters and spaces in the phrase "THE THEORY OF EVOLUTION" by using the evolutionary principle of chance. We might proceed by randomly drawing characters from a Scrabble set consisting of the 26 letters of the alphabet plus a space (for a total of 27). The probability of getting any particular letter or space in our phrase using this

method would be one chance out of 27 (expressed as 1/27). The probability of getting all 23 letters and spaces in the order required for our phrase can be calculated by multiplying together the probability of getting each letter and space (1/27 x 1/27 x 1/27 - for a total of 23 times). This calculation reveals that we could expect to succeed in correctly spelling our phrase by chance, approximately once in eight hundred, million, trillion, trillion draws! If we were to hurry the process along and draw our letters at the rate of a billion per second, we could expect to spell our simple little phrase once in 26 thousand, trillion years! But even this is a "virtual certainty" compared to the probability of correctly assembling any one of the known biological proteins by chance!

The 500 amino acids that make up an average-sized protein can be arranged in over 1×10^{600} different ways (that's the number ONE followed by 600 zeros)! This number is vastly larger than the total number of atomic particles that could be packed into the known universe. If we had a computer that could rearrange the 500 amino acids of a particular protein at the rate of a billion combinations a second, we would stand essentially no chance of hitting the correct combination during the 14 billion years evolutionists claim for the age of the universe. Even if our high-speed computer were reduced to the size of an electron and we had enough of them to fill a room measuring 10 billion light years square (about 1×10^{150} computers!), they would still be exceedingly unlikely to hit the right combination. Such a "room" full of computers could only rearrange about 1×10^{180} combinations in 300 billion years. In fact, even if all the proteins that ever existed on earth were all different, our "room" full of computers would be exceedingly unlikely to chance upon the combination of any one of them in a mere 300 billion years!

Evolutionists counter that the whole probability argument is irrelevant since evolution is utterly purposeless, and thus never tries to make anything in particular! They insist, more over, that "natural selection" makes the impossible, possible. But evolutionists were vigorously challenged on this claim by mathematicians in a symposium held at Massachusetts Institute of Technology (the proceedings were published in the book, *Mathematical Challenges to the Neo-Darwinian Interpretation of Evolution*). Dr. Murray Eden, Professor of Engineering at M.I.T. said: "The chance emergence of man is like the probability of typing at random a meaningful library of one thousand volumes using the following procedure: Begin with a meaningful phrase, retype it with a few mistakes, make it longer by adding letters; then examine the result to see if the new phrase is meaningful. Repeat this process until the library is complete." Where does one find the unquestioning faith to believe such a thing?

ESSAY 13: What Do The Fossils Say?

Most evolutionists insist that the occurrence of evolution is an indisputable fact, even if its exact mechanism must remain speculative. Since evolution is believed to occur far too slowly to be discernible in the time frame of human observers, we must examine prehistoric evidence in the fossil record if we are to observe the "fact" of evolution. In his book *Historical Geology*, evolutionist C. O. Dunbar said: "Fossils provide the only historical, documentary evidence that life has evolved from simpler to more and more complex forms." But what does the fossil evidence say, and does it really support the evolutionary view of origins - or is it perhaps more consistent with Creation?

Fossilization typically occurs when organisms (either living or dead) are deposited from water into sediment. In some instances, the sediment solidifies making a cast of the entombed organism; in others, the organic material of the organism itself is replaced by mineral to form a stony replica. Conditions must be perfect for fossilization to occur, which perhaps explains why there is so little evidence of fossils being formed today. Both the burial of the organism and the hardening of the sediment must occur very quickly or the inevitable decay process will destroy the organism before it can become fossilized.

Evolutionists believe that fossilized organisms were gradually deposited in layers of sediment over hundreds of millions of years, giving us a visual record of at least some of the stages of evolution from the first simple organisms to the most complex. Most creationists, on the other hand, believe that nearly all fossils were formed over a relatively short period of time during and after a world-wide Flood. Thus creationists believe the fossil record reveals organisms that were mostly contemporary - not an evolutionary sequence extending over millions of years. As these beliefs are sufficiently different, it should be quite easy to determine which is more consistent with the fossil record as it actually exists today.

To be consistent with evolution, the fossil record should show how organisms slowly transformed one into another through countless intermediate or transitional stages. Evolutionists, for example, claim that over one hundred million years were required for the gradual transformation of invertebrates into vertebrates; thus we would expect that the fossil record should show at least some of the progressive stages of this large-scale transformation. To be consistent with creation, on the other hand, the fossil record should show no obvious transitional stages between distinctly different kinds of organisms, but rather each kind of organism should appear all at once and fully formed.

It is now a generally recognized fact that the fossil record shows few if any unambiguous intermediate stages in the evolution of an organism into a distinctly different kind of organism. David B. Kitts, an evolutionist and paleontologist, said: "Despite the bright promise that paleontology provides a means of 'seeing' evolution, it has presented some nasty difficulties for evolutionists the most notorious of which is the presence of 'gaps' in the fossil record. Evolution requires intermediate forms between species and paleontology does not provide them." [Evolution 28:467]

Evolutionists have been aware of these missing intermediate or transitional forms since the time of Darwin, and have tried to dismiss the whole problem by appealing to the "incompleteness" of the fossil record. Evolutionists cling to the hope that the "missing links" which they believe formed a continuous chain of evolution may yet be found. But this seems unlikely, since most paleontologists believe that the majority of all existing fossilized species of plants and animals have already been found and identified. Even most currently living kinds of plants and animals have been found in essentially their present form in the fossil record! David Raup, a paleontologist at the Field Museum of Natural History, reported that the growth in our knowledge of the fossil record since Darwin's time provides even less support for evolutionary transformations. Raup writes: "We are now about 120 years after Darwin and the knowledge of

the fossil record has been greatly expanded. We now have a quarter of a million fossil species but the situation hasn't changed much - ironically, we have even fewer examples of evolutionary transition than we had in Darwin's time. By this I mean that some of the classic cases of Darwinian change in the fossil record such as the evolution of the horse in North America, have had to be discarded or modified as a result of more detailed information." [Field Museum of Natural History Bulletin 50:22- 29]

Some evolutionists have argued that the absence of transitional forms is simply an "artifact" of classification. Others insist that the gaps occur only among the higher taxonomic groups, while still others insist that the gaps occur only among the lower taxonomic groups. The evolutionist George Gaylord Simpson conceded, however, that the gaps are a universal phenomenon: "every paleontologist knows, that most new species, genera, and families, and that nearly all categories above the level of families appear in the record suddenly and are not led up to by known, gradual, completely continuous transitional sequences." [Major Features of Evolution, 1953 p.360] Speaking of the highest level of animal classification, evolutionist Philip Handler claimed that: "Some 25 major phyla are recognized for all the animals, and in virtually not a single case is there fossil evidence to demonstrate what the common ancestry of any two phyla looked like." [Biology and the Future of Man, 1970 p. 506] As for the lowest level of taxonomic classification, the popular evolutionist Steven J. Gould said: "In any local area, a species does not arise gradually by the steady transformation of its ancestors; it appears all at once and fully formed." [Natural History 86:12-16] This, of course, is exactly what creationists would expect to find.

While most evolutionists still insist that there are at least a few examples of transitional forms in the fossil record, a growing number question whether the fossil record provides any real evidence of the transformation of one organism into another. Evolutionist Steven M. Stanley concluded that: "The known fossil record fails to document a single example of phyletic evolution accomplishing a major morphologic transition." [Macroevolution: Pattern and Process, 1979 p. 39] Stephen J. Gould tells us that "the extreme rarity of transitional forms in the fossil record persists as the trade secret of paleontology." [Natural History 86:12-16] It would go a long way toward correcting the evolutionary bias in our public schools if even this one "trade secret" were revealed to the students.

Despite the "missing links" in the fossil record, few evolutionists have abandoned their faith in the so called "fact" of evolution. In an article defiantly titled "Who Doubts Evolution," Oxford zoologist Mark Ridley declared: "If the creationists want to impress the Darwinian establishment, it will be no use prating on about what the fossils say. No good Darwinians belief in evolution stands on the fossil evidence for gradual evolution, so nor will his belief fall by it." [New Scientist 90:830-832] We may conclude that the beliefs of "good Darwinians" are not supported by the fossil record while the beliefs of "good creationists" are.

ESSAY 14: The Hopeful Monsters of Evolution

Since the time of Darwin, evolutionists have looked to the fossil record for historical evidence of evolution. Most evolutionists now concede, however, that the fossil record fails to show the progressive transformation of any living organism into a distinctly different kind of organism. This has presented some nasty difficulties for evolutionists - but they have made it clear that they will not be dissuaded by the mere lack of evidence, nor will they turn to a Creator to explain this enigma. Rather, evolutionists hope that monsters may come to their rescue!

All animals and plants appear suddenly in the fossil record and are not preceded by continuous transitional stages. While some of these fossilized organisms have become extinct, many have persisted right up to the present time in what appears to be essentially their original form, showing only a limited range of variation. Bats, for example, appear suddenly in the fossil record with no evidence of "pre-bat" ancestors. Fossil bats have all the same distinctive features we see in bats today, including extraordinarily long webbed fingers on their fore limbs and "backward" facing hind limbs. (Bat knees and toes face to the rear!) Even the distinctive shape of the bat skull, which serves to channel sound to their ears for navigation by sonar (echo location), is found in fossil bats just as it is in all modern bats.

The absence of even a single example of a continuous fossil sequence showing the progressive stages of evolution of any plant or animal would certainly seem to be an insurmountable problem for evolutionism. Evolutionists have long been aware of this problem and have felt compelled to try to explain it away by any means possible, short of abandoning their faith in evolutionism itself. In 1944, the evolutionist George Gaylord Simpson spoke of these missing transitional forms in his book *Tempo and Mode in Evolution*: "Their absence is so nearly universal that it cannot, off hand, be imputed to chance, and does require some attempt at special explanation as has been felt by most paleontologists." Paleontologists have indeed been trying to imagine some "special explanation" for how progressive evolution could occur without leaving any fossil evidence. Since evolutionary speculations have rarely been restricted by the demands of experimental verification, evolutionists have allowed their imaginations to run free and have now devised a really outrageous explanation for their lack of evidence.

In the 1930s, paleontologist Otto Schindewolf concluded that the missing links in the fossil record were not really missing at all, but rather were never there in the first place! Schindewolf proposed that all the major evolutionary transformations must have occurred in single large steps. He proposed, for example, that at some point in evolutionary history, a reptile laid an egg from which a bird was hatched! This bizarre notion was championed in 1940 by the geneticist Richard Goldschmidt of the University of California at Berkeley. Like Schindewolf, Goldschmidt resigned himself to the fact that true transitional forms were not found despite over a hundred years of searching for them, and that evolutionary theory would simply have to accommodate this fact.

Goldschmidt sought to advance Schindewolf's notion of evolution through single large steps by trying to imagine a plausible mechanism for it. He suggested that the answer might lie in what are known as embryological monsters, such as the occasional birth of a two-legged sheep or a two-headed turtle. Goldschmidt conceded that such monsters rarely survived very long in nature, but he hoped that over a long period of time some monsters might actually be better suited to survive and reproduce than their normal siblings. Goldschmidt named this monstrously hopeless speculation the "hopeful monster theory." Since there was not even the slightest shred of evidence to support the hopeful monster theory, it was dismissed with derision by almost all evolutionists of his time. But Goldschmidt was quick to point out to his critics that there wasn't the slightest evidence for their gradual evolution either!

The hopeful monster theory would have joined the "recapitulation theory" in the scrap heap of abandoned evolutionary speculations, were it not for Stephen J. Gould and Niles Eldridge. In

1972, these influential evolutionists resurrected the long-discredited hopeful monster theory and gave it a more respectable name - "punctuated equilibrium." This theory speculates that the intermediate stages in the evolution of organisms do not appear in the fossil record because these transitional organisms were short-lived, extremely unstable species which, as luck would have it, quickly evolved into stable species. Thus, the evolution of any organism is characterized by long periods of equilibrium (no evolutionary change) during which time many offspring, and thus many fossils, are produced - punctuated by relatively rapid bursts of evolution that left no fossil record. In the May 1981 issue of Discover magazine, Gould explained that "two outstanding facts of the fossil record - geologically sudden origin of new species and failure to change thereafter" actually "predicted" this new evolutionary theory!

While most evolutionists have now reluctantly accepted punctuated equilibrium as the only way out of a difficult situation (i.e., no evidence), a few stubbornly cling to classical Darwinism, and indeed it is this discredited version of evolution that is generally taught as "fact" in our schools. Eldridge challenged classical Darwinists by reminding them that they could disprove punctuated equilibrium theory if they were to find so much as a single series of intermediate forms in the fossil record; to date no one has. Of course the sudden appearance of relatively unchanging organisms in the fossil record is perfectly consistent with special creation, but most evolutionists find the idea of an omnipotent Creator to be simply unthinkable.

Many of the arguments that Eldridge and Gould have used to refute the beliefs of classical Darwinists sound like they are actually trying to support special creation, but this is hardly their intent. For example, in his regular column in Natural History magazine (May 1977 pp. 12-16), Gould chided the gradual evolutionists for appealing to the "extreme imperfection" of the fossil record in an effort to explain the missing links. He countered that even if we were to grant this "traditional escape," it still would not answer the biggest question - the viability of the transitional forms themselves. Gould pointed out that it is difficult to even imagine how transitional animals passing through the intermediate stages of evolution would be benefited or even survive. He asked: "Can we invent a reasonable sequence of intermediate forms, that is, viable, functioning organisms, between ancestors and descendants? Of what possible use are the imperfect incipient stages of useful structures? What good is half a jaw or half a wing?" Now that's a good question: One only needs to imagine a mouse-like creature slowly transforming into a bat to appreciate what Gould is saying. The reader may well ask at this point, of what use is evolutionary speculation itself - and why is it being taught as a "fact" in our schools?

ESSAY 15: Climbing The "Ladder Of Life" In The Grand Canyon

Several years ago, I was challenged by an evolutionist colleague to visit the Grand Canyon in Arizona. He assured me that a hike into the Grand Canyon would be a "sure-cure for creationism." Here, he said I would see that the many layers of rock forming the walls of the Canyon get progressively older as one descends from the rim (where the rocks are "only" about 60-million years old) to the bottom (where the rocks are said to be well over a billion years old). Then, he claimed, as I ascended the wall of the Canyon I would be climbing up the evolutionary "ladder of life"! He assured me that the fossils in each succeeding layer of rock would reveal the progressive steps of over a billion years of evolutionary history, ranging from the first living cells to the early reptiles. Surely, if one is to see physical evidence of the progressive stages of evolution anywhere on earth, the Grand Canyon should be the place to look. Well, after researching the Grand Canyon, I accepted the challenge to pay it a visit. In fact, I visited the Canyon on three different occasions, and twice hiked its trails from river to rim. I discovered that not only are the evolutionist's "missing links" truly missing - their whole "ladder of life" is missing!

The Grand Canyon is about 270 miles long and, in places, over a mile deep. Its walls reveal 21 distinct layers of mostly sedimentary rock. The deepest, and presumably oldest, layers of sedimentary rock in the Grand Canyon are collectively known as Precambrian strata. For over 100 years, geologists have searched for fossils in Precambrian layers all over the earth in hope that they might see how the first living organisms evolved. In the Canyon, as elsewhere, Precambrian fossils are largely limited to curious dome-shaped, laminated structures called "stromatolites." While there is some question whether these stromatolites are really a product of living organisms, similar structures are formed in our oceans today by mats of one-celled photosynthetic organisms called "cyanobacteria."

The next three layers of the Canyon (Tapeats Sandstone, Bright Angel Shale and Muav Limestone) are collectively identified as Cambrian strata and are said to range from 600 million to 400 million years old. Here, many fossils of trilobites, oysters, clams, corals, worms and brachiopods are suddenly found. All of these are marine invertebrates, and all (with the possible exception of trilobites) have representatives living in our oceans today. Paleontologists speak of the great "Cambrian explosion" because, all over the world, these layers show the sudden appearance of fossils representing virtually every phylum of animals. In not a single case is there fossil evidence to show what their presumed ancestors looked like - they appear all at once and fully formed!

The next two fossil bearing layers encountered in our climb up the Canyon's "ladder of life" are the Redwall Limestone (said to be 300-million years old) and the Supai group (200-million years old). These layers contain fossils of more marine invertebrates including three relatively simple types not seen in the lower layers - the bryozoans, crinoids and foraminiferans. All three have living representatives in our oceans today. The foraminiferans are of particular interest because they are a phylum of one-celled marine organisms that evolutionists consider to be among the first forms of life to have evolved a nucleus. Why then, are these "primitive" single-cell organisms first encountered halfway up our "ladder of life"? So far, our "ladder" seems to be pretty much a "one rung" affair, with no obvious vector of evolutionary progress. It gets worse, however. The next rung shows evidence of foot prints - but no feet!

One of the most amazing facts about the Grand Canyon is that no one has ever found a single fossilized bone in the Canyon! Beginning in the Supai layer and extending upward into the Hermit and Coconino layers, countless fossilized foot prints of over 20 species of amphibians and reptiles suddenly appear - but no fossils of their bones or teeth! The bones of tetrapods (four-legged animals) that could have made these foot prints have only been found in more superficial strata located several miles away from the Canyon. Interestingly, the occurrence of foot prints in strata well below the layers in which fossilized bones are first found is not unique to the Grand Canyon. Geologists concede that this is a world-wide phenomenon! How then can we

consider the fossils in the geologic column to be a reliable record of evolutionary succession? Are we to believe that foot prints evolved 150-million years before feet? Those who accept the Biblical account of Noah's flood might prefer to think that the common occurrence of foot prints in strata below those bearing the bodies themselves reveals something about how long these tetrapods could tread water before drowning!

Even more amazing is the fact that most of the fossil footprints in the Coconino are headed in the same direction! Are we to believe that for 10 million years, amphibians and reptiles mostly walked in the same direction? Not only are the majority of these foot prints headed in a northerly direction, but this direction generally slopes uphill! While camping in the Canyon, I heard a park ranger give a lecture on its fossils. She was quite serious when she explained that geologists now believe the reason most fossil foot prints head uphill is that the reptiles who made them always walked uphill (leaving foot prints), but had a habit of sliding down hill! Certainly, one could make a more plausible argument for reptiles running up hill to escape the advancing waters of Noah's Flood, than one could for "lazy lizards."

The top two layers of the Canyon are the Toroweap and Kaibab layers. Neither layer shows evidence of foot prints of any kind and, of course, there is still no trace of bones. Fish teeth have been found in the Kaibab, but this is clearly a case of too little, too late. To add insult to injury, the Kaibab Limestone layer at the very top of our "ladder of life" shows the only evidence to be found in the Canyon of fossilized sponges! This is embarrassing to evolutionists, because sponges are a loose collection of living cells that are believed to be the first multicellular organisms to have evolved on earth.

It's easy to come away from the Grand Canyon thinking you have make a startling discovery that evolutionists ought to know about - there is no evidence of evolutionary progress in the fossils of the geologic column! I was surprised to learn that evolutionists are already aware of this fact, although you would never guess it from the evolutionary indoctrination presented in public schools and popular media. Harvard evolutionist Stephen J. Gould appears to have no illusions about the evidence for evolutionary succession in the geologic column when he says: "I regard the failure to find a clear vector of progress in life's history as the most puzzling fact of the fossil record. (Natural History Vol. 93, p23)." A hike to the bottom of the Grand Canyon is a sure cure for evolutionism, but don't expect to climb out on the "ladder of life" - It Isn't There!

ESSAY 16: The Dating Game

Much of the controversy between evolutionists and creationists concerns the age of the earth and its fossils. Evolution, depending as it does on pure chance, requires an immense amount of time to stumble upon anything remotely approaching the complexity we see in even the simplest living things. For over 100 years, geologists have attempted to devise methods for determining the age of the earth that would be consistent with evolutionary dogma. At the time Darwin's *On the Origin of Species* was published (1859), the earth was "scientifically" determined to be 100 million years old. By 1932, it was found to be 1.6 billion years old. In 1947, geologists firmly established that the earth was 3.4 billion years old. Finally in 1976, they discovered that the earth is "really" 4.6 billion years old. These dates indicate that for 100 years, the age of the earth doubled every 20 years. If this trend were to continue, the earth would be 700 thousand-trillion- trillion- trillion years old by the year 4000 AD. This "prediction," however, is based on selected data and certain assumptions that might not be true. As we will see, selected data and unprovable assumptions are a problem with all methods for determining the age of the earth, as well as for dating its fossils and rocks. It has all become something of a "dating game" in which only the evolutionarily-correct are allowed to play.

The most widely-used method for determining the age of fossils is to date them by the "known age" of the rock strata in which they are found. On the other hand, the most widely-used method for determining the age of the rock strata is to date them by the "known age" of the fossils they contain. This is an outrageous case of circular reasoning, and geologists are well aware of the problem. J. E. O'Rourke, for example, concedes: "The intelligent layman has long suspected circular reasoning in the use of rocks to date fossils and fossils to date rocks. The geologist has never bothered to think of a good reply, feeling the explanations are not worth the trouble as long as the work brings results" (*American Journal of Science* 1976, 276:51). In this "circular dating" method, all ages are based on evolutionary assumptions about the date and order in which fossilized plants and animals are believed to have evolved.

Most people are surprised to learn that there is, in fact, no way to directly determine the age of any fossil or rock. The so called "absolute" methods of dating (radiometric methods) actually only measure the present ratios of radioactive isotopes and their decay products in suitable specimens - not their age. These measured ratios are then extrapolated to an "age" determination. This extrapolation is based on the fact that an unstable (radioactive) chemical element, called the parent isotope, breaks down at a presently known rate to form a more stable daughter isotope. In the case of radiocarbon dating, an unstable isotope of carbon (C14) decays to a more stable form of carbon (C12). This currently occurs at a rate which would be expected to reduce the quantity of the parent C14 by half every 5,730 years (the half-life). In other words, the less of the parent isotope (and the more of the daughter isotope) we measure in a specimen, the older we assume it to be.

Radiocarbon dating is actually of little use to evolutionists. There are several reasons for this. First, no rocks and very few fossils contain measurable quantities of carbon of any kind. Second, because of the short half-life of C14, the radiocarbon method can only date specimens up to about 40,000 years of age. Essentially nothing of evolutionary significance is believed to have occurred in this "short" time frame. The most commonly used radiometric methods for "dating" geological specimens are potassium-argon, uranium-thorium-lead, and strontium-rubidium. All three of these decay processes have half-lives measured in billions of years. None of these methods can be used on fossils or the sedimentary rock in which fossils are found. All radiometric dating (with the exception of carbon dating) must be done on igneous rocks (rocks solidified from a molten state such as lava). These radiometric "clocks" begin keeping time when the molten rock solidifies. Since fossils are never found in igneous rocks, one can only date lava flows that are occasionally found between layers of sedimentary rock.

The problem with all radiometric "clocks" is that their accuracy critically depends on several starting assumptions which are largely unknowable. To date a specimen by radiometric means, one must first know the starting amount of the parent isotope at the beginning of the specimen's existence. Second, one must be certain that there were no daughter isotopes in the beginning. Third, one must be certain that neither parent nor daughter isotopes have ever been added or removed from the specimen. And fourth, one must be certain that the decay rate of parent isotope to daughter isotope has always been the same. That one or more of these assumptions are often invalid is obvious from the published radiometric "dates" (to say nothing of unpublished dates) found in the literature.

One of the most obvious problems is that several samples from the same location often give widely- divergent ages. Apollo moon samples, for example, were dated by both uranium-thorium-lead and potassium-argon methods, giving results which varied from 2 million to 28 billion years. Lava flows from volcanoes on the north rim of the Grand Canyon (which erupted after its formation) show potassium- argon dates a billion years "older" than the most ancient basement rocks at the bottom of the canyon. Lava flows from underwater volcanoes near Hawaii (that are known to have erupted in 1801 AD) have been "dated" by the potassium-argon method with results varying from 160 million to nearly 3 billion years. No wonder the laboratories that "date" rocks insist on knowing in advance the "evolutionary age" of the strata from which the samples were taken - this way, they know which dates to accept as "reasonable" and which to ignore. Of one thing you may be sure: whenever "absolute" radiometric dates are in substantial disagreement with evolutionary assumptions about the age of associated fossils, the fossils always prevail.

As far as the plausibility of evolution is concerned, it really doesn't make any difference if the earth is 10 billion years old or 10 thousand years old. Indeed, if the whole of evolution were reduced to nothing more than the chance production of a single copy of any one biologically useful protein, there would be insufficient time and material in the known universe to make this even remotely likely. Time by itself simply does not make the hopeless evolutionary scenario of chance and natural selection more reasonable. Imagine if a child were to claim that he alone could build a Boeing 747 airplane from raw material in 10 seconds, and another were to claim he could do it in 10 days. Would we consider the later less foolish than the former, simply because he proposed spending nearly a million times more time at the task? Our Creator tells that "the fool has said in his heart, there is no God."

ESSAY 17: The Religion of Nature: Social Darwinism

It has been said that no book, other than the Bible, has had a greater affect on society than Darwin's *On the Origin of Species*. Evolutionist Steven Jay Gould, wrote that following the publication of *On the Origin of Species* in 1859, "subsequent arguments for slavery, colonialism, racial differences, class structures, and sex roles would go forth primarily under the banner of science" (*The Mismeasure of Man*, W.W. Norton and Company, New York, 1981, p. 72). Darwin himself seemed to approve of the application of his evolutionary ideas to moral and social issues. In a letter to H. Thiel in 1869, Darwin said: "You will really believe how much interested I am in observing that you apply to moral and social questions analogous views to those which I have used in regard to the modification of species. It did not occur to me formerly that my views could be extended to such widely different and most important subjects" (*The Life and Letters of Charles Darwin*, Francis Darwin editor, D. Appleton and Co., 1896, Vol. 2, p. 294). The feature of Darwinism most often sighted by those who attempt to justify their moral and social views with "science" (evolution), is the concept of the "survival of the fittest." This application of Darwinian dogma to human society and behavior is known as Social Darwinism.

One of the most insidious features of Darwin's evolutionary speculation was that it sought to erase the fundamental differences between man and animals. This not only invited a comparison between man and the apes, but also between the "highest" and "lowest" humans. Blacks and American Indians were among the first to be singled out as being "lower" than Caucasians. In his book *The Mismeasure of Man* (Chap. 3), Steven Jay Gould pointed out that some anthropologists were not above falsifying their data to prove the "superiority" of the white race. For example, assuming brain size had something to do with intelligence (it doesn't), many anthropologists intentionally exaggerated the size of Caucasian skulls and underestimated the size of skulls from Blacks and Indians. Social Darwinism thus came to serve as a "scientific" justification for racism.

It might be argued that Darwin would never have condoned this use of his "theory," but his own writings reveal profoundly racist implications. In the sixth chapter of his book *Descent of Man*, Darwin predicted that eventually evolution would increase the gap between humans and the lower apes through the extinction of such "evolutionary intermediates" as gorillas and Negroes! Darwin declared that "the break will then be rendered wider, for it will intervene between man in a more civilized state, as we may hope, than the Caucasian, and some ape as low as a baboon, instead of as at present between the Negro or Australian and the Gorilla" (*Descent of Man*, Charles Darwin, 1871, p.201).

In an effort to promote the evolution of "higher forms" of humans, Darwin's cousin, Sir Francis Galton, founded the Eugenics Movement. Eugenics is the "science" which seeks to improve the biological makeup of the human species by selective breeding. Galton advocated the regulation of marriage and family size according to genetic quality of the parents. He believed that if controlled breeding was applied to humans, as it was to farm animals, a perfect human breed could be developed. This concept of the "master race" was put into practice by Adolph Hitler in Germany in an effort to create a "pure Aryan race," while exterminating "inferior" Jews.

German politicians and scholars first used Social Darwinism around the turn of the Century to justify Germany's increasingly aggressive militarism. The German militarist, Friederich von Bernhardi, praised the virtues of war in strong evolutionary terms in his influential book *Germany and the Next War*. Bernhardi declared that war, like Darwinian survival of the fittest, was a "biological necessity" and that it "gives a biologically just decision, since its decisions rest on the very nature of things." Bernhardi dismissed the whole idea of peaceful arbitration as a "presumptuous encroachment on the natural laws of development." According to Bernhardi, a study of plant and animal life clearly showed that "war is a universal law of nature" (As quoted by Ashley Montagu in *Man in Process*, World Pub. Co., 1961, pp. 76-77). Bernhardi's book,

published in 1911, had Germany's highest official sanction and approval - three years later, Germany plunged the world into World War I.

By the time of the World War II, we find the full "flower" of Social Darwinism in fascism. Hitler based his fascism on evolutionary theory, as is evident from both his speeches and his book *Mein Kampf*. Benito Mussolini, who brought fascism to Italy, was also greatly influenced by Darwinism, which he thought supported his belief that violence is essential for beneficial social transformation. Mussolini repeatedly used Darwinian catchwords in his speeches and ridiculed efforts at peace because they interfered with natural evolutionary process.

No discussion of the devastating impact of Social Darwinism on society would be complete without considering its strong influence on the development of Marxism and communism. Frederick Engels and Karl Marx (cofounders of Marxist communism) were exceedingly enthusiastic over Darwin's book *On the Origin of Species*. Karl Marx wrote a letter to Engels in December of 1860 declaring that *On the Origin of Species* was "the book which contains the basis in natural history for our views." In another letter to Engels in January of 1861, Marx declared: "Darwin's book is very important and serves me as a basis of struggle in history... not only is a death blow dealt here for the first time to 'Teleology' in the natural sciences, but their rational meaning is emphatically explained" (As quoted by Conway Zirkle in: *Evolution, Marxian Biology, and the Social Scene*, University of Pennsylvania Press, 1959, p. 86).

The three things for which Marx was most indebted to Darwinism were: 1) an atheistic explanation for the origin of the Cosmos (Marxism doesn't recognize anything as being higher than the state so it demands atheism); 2) the struggle for existence; and 3) the progressive development and improvement of man (Marxism insists that man's well-being is inevitably and progressively improved through a blind process of class struggle and revolution). Indeed, Karl Marx was so deeply indebted to Darwin that he wanted to dedicate his book *Das Capital* to him, but Darwin declined the "honor."

The close affinity between Marxism and Darwinism continues to be evident in the currently popular evolutionary speculation called "punctuated equilibrium." (This declares that evolution occurs by sudden lucky-leaps forward, separated by long periods of essentially no change.) Stephen Jay Gould and Neils Eldredge, who first popularized this notion, recently pointed out that: "Hegel's dialectical laws, translated into a materialist context, have become the official 'state philosophy' of many socialist nations. These laws of change are explicitly punctuational, as befits a theory of revolutionary transformation in human society. In the light of this official philosophy, it is not at all surprising that a punctuational view of speciation, much like our own, but devoid of references to synthetic evolutionary theory, has long been favored by many Russian paleontologists. It may also not be irrelevant to our personal preferences that one of us learned his Marxism, literally, at his daddy's knee" (Eldredge, Niles and Stephen Jay Gould, *Paleobiology* Vol. 3, Spring 1977, pp. 145-146.).

When man ceases to give credit to God as Creator, he generally gives the credit to nature (evolution). Not only is nature then perceived as "creator", but also man's guide for morality and behavior. The "nature god" declares that anything which is "natural" may be considered "moral." (Thus, elective abortions are moral because spontaneous abortions occur in nature.) As we have seen, the fruit of this religion of nature (in the form of Social Darwinism) has been untold suffering and death. The Bible tells us that this sad state of affairs results from the fact that many have "exchanged the truth of God for a lie, and worshipped the creature (nature) rather than the Creator" (Rom. 1:25).

ESSAY 18: Species, Speciation and the Genesis Kind

In his "table talks," Martin Luther spoke of the Greek scholar Cicero's proof for the existence of God: "The best argument that there is a God - and it often moved me deeply - is this one that he proves from generation of species; a cow always bears a cow, a horse always bears a horse, etc. No cow gives birth to a horse, no horse gives birth to a cow, no goldfinch produces a siskin. Therefore it is necessary to conclude that there is something that directs everything thus" (Luther's Works, 1967 Fortress Press, p. 423). As obvious as this principle of "like begets like" is in terms of common experience, a central tenet of Darwinism is that in the course of time, things are very different. Evolutionists seek to account for the origin of all species (past and present) from a single, hypothetical, primordial-life-form by means of progressive change and natural selection.

Many think that Darwin solved the problem of speciation (development of new species) with the publication of his book *On the Origin of Species*. In fact, Darwin didn't really deal with the subject, much less explain it. This failure to address what was seemingly the central issue of his study stemmed from the fact that Darwin, like many of the other English "transformationists" of his time, did not really recognize the species as a distinct and real category of organisms. Rather, he extrapolated the continuous (but limited) variation he saw among pigeons, finches, dogs, etc. into a limitless and seamless continuum among all organisms.

There were essentially two schools of biology in the 19th century which we might call the "typological" or German school, and the "populational" or British school. Most of the great German (and French) biologists of this time viewed the species as a true type in nature. Many British biologists, on the other hand, focused on the variation among individuals within a species, and viewed the species as nothing more than a statistical average of the population. This, in turn, led many to conclude that the entire system of classification of organisms was merely an arbitrary pattern imposed on what was in reality a continuum. It is not surprising then that the concept of evolution grew out of the British School, while many German and French naturalists were among Darwin's strongest critics.

The first problem in discussing the origin of species is to define just what we mean by a species. Complicating the definition of a species is the use in scientific literature of terms such as: sibling species, subspecies and semispecies. Until nearly the later half of this century, a species was considered to be any systematic unit classified as a species by a competent systematist. More often than not, an animal's anatomy (rather than its ability to interbreed) was considered the primary determinant of a species. As a result of this approach, ten interbreeding varieties of red foxes were once divided into ten separate "species" merely on the basis of their color and geographical distribution. The red foxes are now considered to represent one species (*Vulpes fulva*) comprising 12 "subspecies." The southern pocket gopher has 214 such subspecies! Subspecies then, is simply another name for what has long been known as a variety.

The modern definition of a species tends to ignore anatomical differences or similarities and focuses almost entirely on whether or not a natural population interbreeds. The evolutionist Francisco Ayala has defined a species as "groups of interbreeding natural populations that are reproductively isolated from other such groups." By this widely accepted definition, two geographically separated organisms could be almost indistinguishable (and capable of interbreeding in the laboratory) yet be considered two different "species" by reason of their failure to interbreed in nature. Such populations are often referred to as "sibling species." By this definition of species, there are over 6000 species of fruit flies in Hawaii alone!

Regrettably, the term species is not always used consistently today. The nearly 150 varieties of strikingly distinctive dog breeds recognized by the American Kennel Club are all considered to be members of the same species *Canis familiaris*, because they all can cross breed. Yet the gray wolf (*Canis lupus*) and the coyote (*Canis latrans*) are considered to be different species,

though they too are known to interbreed with dogs. Creationists have long felt a need for a classification that would include in one consistent category all organisms that interbreed under any conditions.

The Bible employs the Hebrew word *min* 21 times in the Old Testament to speak of the different "kinds" of animals. In Genesis the created *min* were said to reproduce each after its own kind, suggesting strict reproductive limits. All birds, for example, are clearly not one *min*. In the 14th chapter of Deuteronomy we find a separate *min* applied respectively to the raven, the ostrich, the nighthawk, the sea gull, the hawk, the little owl, the great owl, the water hen, the pelican, the vulture, the cormorant, the stork, and the heron. The classification species as used today is clearly more limited than the Old Testament *min*.

Using the Biblical concept of classification, it would seem appropriate to include all true cattle of the genus *Bos* (seven different species) in one *min* since they all can interbreed. The Santa Gertrudis breed of cattle, for example, was developed by crossing Brahman bulls (*Bos indicus*) with shorthorn cows (*Bos taurus*). Even the African buffalo (*Syncerus caffer*), can be crossed with the American bison (*Bison bison*) and with other true cattle, suggesting that all of these animals, though representing different genus and species, could be considered to be of the "cattle kind" or *min*.

While animal species have never been observed to evolve into distinctively different species, new species have been produced in plants through the process of hybridization. In 1881, for example, Judge J. L. Logan of California crossed a raspberry (*Rubus idaeus*) with a blackberry (*Rubus allegheniensis*) to produce the loganberry (*Rubus loganobaccus*). The loganberry breeds true, with no tendency to revert back to either parent and is one of many examples of a true modern hybrid in plants. Hybridization among animals is much more restricted than in plants because of their more specialized mode of sexual reproduction.

It has long been hoped by evolutionists that the science of genetics would provide an explanation of how fundamentally new species are formed, but this has not been the case. Attempts to explain evolution by "macromutations" have failed, as have the attempts to equate evolution with mere changes in the gene frequencies in populations (population genetics). The evolutionist Richard Lewontin said that, "It is an irony of evolutionary genetics that, although it is a fusion of Mendelism and Darwinism, it has made no direct contribution to what Darwin obviously saw as the fundamental problem: the origin of species" (*The Genetic Basis of Evolutionary Change*, 1974, p. 159).

We may safely conclude that there has never been an exception to the simple words of Genesis 1:24: "And God said, Let the earth bring forth the living creature after his kind, cattle, and creeping thing, and beast of the earth after his kind: and it was so."

ESSAY 19: Monkeying With The Scopes Monkey Trial

There has never been a stranger trial in the history of American jurisprudence than the famous Scopes "monkey trial" that took place in Dayton, Tennessee in 1925. This trial pitted William Jennings Bryan against Clarence Darrow in a classic confrontation over the teaching of evolution and creation in the public schools. Regrettably, much confusion about the important issues raised in this trial has been perpetuated by the frequent showing of the Jerome Lawrence and Robert E. Lee play *Inherit The Wind* (and its many film and television versions). *Inherit The Wind* is clearly based on the Scopes trial, but takes considerable theatrical liberties to portray the trial as a moral triumph of "science" (evolutionism) over Christian "fundamentalism" (creationism).

The gist of the play is that a young biology teacher is jailed and tried by local businessmen and clergy for daring to teach evolution in the high school. Bible-believing Christians, (especially the "fundamentalist" prosecuting attorney) are portrayed as ignorant, mean-spirited, and close-minded hypocrites who seek both legal and divine vengeance against the teacher for his great "crime." They are opposed by a defense lawyer (a brilliant, broad-minded, and kindly agnostic) who fights courageously to spare the young teacher from this army of ignorance. This is all pretty typical "Hollywood" fare, and would hardly merit our examination were it not for the fact that this scenario has come to be perceived as essentially a historical account of the Scopes trial. The facts show otherwise.

The basis for the Scopes trial was a presumed violation of the Butler Act by teacher John Scopes. The Butler Act declared that it was unlawful for a teacher in the public schools of Tennessee "to teach any theory that denies the story of the Divine Creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animals." This law was one of 36 such bills introduced in 20 states in the 1920s. The Butler act, like many others, did not forbid teaching the evolution of animals and plants; only human evolution was proscribed. The maximum fine for violation of the Butler act was \$200. Imprisonment was not a provision of the law and John Scopes was never jailed.

The whole idea of suing a teacher for teaching evolution was not conceived by the citizens of Dayton Tennessee, but rather was promoted by the American Civil Liberties Union (ACLU) in New York City. The ACLU advertised in newspapers to locate a teacher in Tennessee who would be willing to test the Butler Act in the courts (with all expenses to be paid by the ACLU). A Dayton resident, George Rappleyea, saw an ACLU advertisement in a Chattanooga newspaper and pressured his friend John Scopes to accept the offer. Unfortunately, Scopes was not a science teacher (he majored in prelaw) and had never actually taught evolution! Scopes was a math teacher and football coach who had merely filled in for the biology teacher (who was ill) for two weeks at the end of the school year. Still, with Scopes' reluctant permission, Rappleyea immediately notified the ACLU that "Professor J. T. Scopes, teacher of science Rhea County high School, will be arrested and charged with teaching evolution."

The Scopes trial began on July 10th, 1925 and lasted 8 days. The trial became a major media event covered by over 200 newsmen. It was the first trial to be covered by a national radio broadcast, and the first to receive international coverage as 65 telegraph operators sent daily reports over the newly-laid transatlantic cable. Dayton took on a carnival atmosphere as spectators, "soap box" orators, and vendors converged on the little town from all over America. Much of this attention resulted from the fact that two of Americas most famous lawyers faced off on a deeply divisive religious and philosophical issue - how did humans come into being, and what control should parents have over how this subject is handled in our public schools.

The chief lawyer for the prosecution was William Jennings Bryan, a popular speaker who is widely regarded as one of Americas greatest orators. Bryan was a leader in the Democratic Party for nearly 30 years, and served as Secretary of State under Woodrow Wilson. Though

politically liberal in many of his views, Bryan was a conservative Christian who early developed a strong interest in the creation-evolution controversy. He clearly favored creation, but was inquisitive enough about evolution to have read Darwin's *On the Origin of Species* in 1905 (20 years before the Scopes trial). Bryan was sufficiently sophisticated in his knowledge of the scientific evidence to carry on a correspondence-debate with distinguished evolutionists of his day such as Dr. Henry Fairfield Osborn. Bryan publicly declared that he did not oppose the teaching of evolution in the public schools as long as it was dealt with as a theory rather than a fact.

The chief lawyer for the defense, Clarence Darrow, was a well-known criminal lawyer who specialized in defending unpopular people and causes. Darrow was an outspoken agnostic who was eager to discredit Biblical Christianity and promote evolutionism. Darrow made it clear in his autobiography (*The Story of My Life*, Charles Scribner & Sons, 1965) that his only purpose in participating in the Scopes trial was to make the country aware of evolutionary beliefs, and to publicly ridicule the beliefs and perceived intentions of fundamentalist Christians. Darrow could be exceedingly hostile in his treatment of the opposition and was cited for contempt of court during the Scopes trial for repeatedly interrupting and insulting Judge Raulston!

Although the only question in the trial was whether or not John Scopes taught that man evolved from lower orders of animals, the "defense" mainly sought to promote evolutionism and discredit the Biblical account of creation. The question of Scopes' guilt or innocence was of no concern to his "defense." In fact, the lawyers for the defense actually had to coach Scopes' students (with limited success) to claim they were taught evolution. To make evolution believable to the jury, the defense and its witnesses often equated evolution with the development of the embryo! Though irrelevant to the case, Darrow had gathered a large group of evolutionists to testify to the "fact" of evolution. The prosecution successfully demanded the right to cross-examine these expert witnesses. Darrow was so determined that his "experts" not be questioned on their evolutionary opinions, that he refused to call his witnesses to the stand!

In one of the most extraordinary events in the trial, the prosecuting attorney was actually put on the witness stand (as an expert on the Bible) to be questioned by the defense! Ignoring the advice of his fellow counsel, Bryan agreed to be questioned by Darrow on his own Christian beliefs, with the understanding that he would then have the opportunity to question Darrow regarding his atheistic beliefs. After systematically ridiculing Bryan for his acceptance of the miracles and teachings of the Bible, Darrow asked the judge to instruct the jury to find his own client (John Scopes) guilty as charged! This incredible concession served to bring the trial to a speedy conclusion and spared Darrow from taking the witness stand to be questioned by Bryan. This ploy also prevented Bryan from giving his closing argument to a world-wide audience.

In his closing argument (published after the trial, *The Worlds Most Famous Court Trial*, National Book Company, Cincinnati, 1925 p.323 &325), Bryan contrasted the revealed truth of God with the evolutionary speculations of men: "Christianity welcomes truth from whatever source it comes, and is not afraid that any real truth from any source can interfere with the divine truth that comes from the inspiration of God... The evolutionist does not undertake to tell us how protozoa, moved by interior and resident forces, sent life up through all the various species, and cannot prove that there was actually any such compelling power at all. And yet, the school children are asked to accept their guesses and build a philosophy of life upon them."

ESSAY 20: What A Difference A Day Makes!

The lyrics of a popular song remind us "What a difference a day makes - 24 little hours." Nowhere is this observation more profoundly true than in our proper understanding of the Hebrew word for day (yom) which occurs over 200 times in the Old Testament. Like our English word "day," yom can be used to mean an ordinary 24-hour day or an indefinite period of time (such as "in the day of Abraham"). In both English and Hebrew, the intended meaning of "day" is generally obvious by the context in which it is used. For example, in over 100 instances where the phrase "evening and morning" accompany the word yom in the Old Testament (as it does in the days of Creation in Genesis), it always refers to an ordinary 24-hour day. Also, in all the places in Scripture where the word yom is preceded by a number (as it is in the days of Creation.), it always means a 24-hour day. Despite these simple and quite obvious rules governing its use, interpretation of the Hebrew word yom in the Creation week of Genesis has become one of the most contested issues among professing Christians and Jews. How could this be, and is it really important?

For centuries, the six days of Creation in Genesis were understood by nearly all Church Fathers and Biblical Hebrew scholars to be ordinary 24-hour days. However, due to the widespread acceptance of evolution over the last 130 years (even in the church), attempts have been made to interpret the days of Creation in a way consistent with the evolutionary time scale. Even many who accept fiat creation (Creation out of nothing through the power of God's Word) feel compelled to somehow incorporate the evolutionary time scale, if not the evolutionary process itself, into the Genesis account of Creation. Thus, some creationists have attempted to stretch the seven "days" of the Creation week into several billion years!

The reason "old-earth creationists" have accepted the evolutionary time scale is they believe that current estimates of the ages of the earth and universe are absolute facts, with which it would be foolish to disagree. But estimations of both the age of the earth and the universe critically depend on unprovable assumptions regarding their origin. The prevailing evolutionary assumption regarding the origin of the universe is known as the "big-bang theory." According to this view, the universe began with an explosion of a small and unimaginably dense ball of matter/energy known as the "cosmic egg." As the material of this "egg" (originally mere protons and hydrogen) expanded uniformly in all directions into a limitless void, it somehow condensed to form the various celestial objects such as the stars and planets, though this would not be expected. The essential evidence for this theory is that all stars seem to be continually moving away from one another (the so called "red shift"). Thus the age of the universe is calculated, in part, by determining how long it would take for the universe to expand at its current rate to its current dimensions. Unfortunately, no one knows what the actual rate of expansion or dimensions of the universe are.

Estimates of the age of the universe based on "big-bang" assumptions have been in the range of 14-17 billion years. Recent evidence from the Hubble space telescope, however, has led astronomers to reduce their estimates of the age of the universe to 8-12 billion years. This has resulted in an embarrassing situation, where many of the stars in the universe are now thought to be older than the universe itself! For this and many other reasons, the "big-bang theory" has come under intense criticism in the scientific community. A growing number of cosmologists now favor the "plasma theory" for the origin of the universe. If the plasma theory prevails, we may expect to see the universe declared to be vastly older than any previous estimates.

Perhaps the most popular evidence for an old universe is the apparent time required for light to reach the earth from our more distant stars. Some stars are estimated to be several billion light years away (a light year is the distance light travels in a year). Thus it is argued that since it would take billions of years for the light from such stars to reach the earth, these stars must have been in existence and emitting light for billions of years. Creationists who find this a compelling argument for an old universe apparently assume that even a God who can create

stars by the power of His Word, must still wait patiently for their light to reach the earth. While young-earth creationists believe that God instantly created the stars and their long light beams (and thus only give the appearance of age), old-earth creationists counter that God would never instantly create anything with the appearance of age as this would be "deception."

The issue, however, is really one of God's sovereignty, not deception. The God who created light (to separate the day from the night on earth) three days before He created the sun would hardly have to wait for "poky" light beams! Not only starlight, but virtually everything God created would have the appearance of age at the very moment of its Creation. Consider something as simple as Eve's hair for example. Eve is often pictured as a young woman (perhaps in her teens?), with scalp hair measuring about two feet in length. It would have required nearly 10 years for Eve's hair to have grown to this length at current rates (.3 millimeters/day). Surely God was not obliged to create a bald Eve and then wait for the hair to grow. Thus Eve's hair, like every other part of her body, would give the appearance of age (actually many different ages) at the moment of her creation.

Old-earth creationists generally accept without question the ages given by evolutionary geologists for the various layers of the "geologic column." The estimated ages of these sedimentary layers (which get increasingly older as you descend the column) are primarily based on the assumed evolutionary age of the fossilized organisms they contain. Thus, old-earth creationists are obliged to accept a progressive appearance of living organisms (whether by creation or evolution) spread out over hundreds of millions of years. Young-earth creationists, on the other hand, believe that the sedimentary layers of the geological column and its fossils were deposited in a short period of time by the Noachian Flood. Thus, while young-earthers see the geologic column and its fossils as evidence of God's catastrophic punishment for sin, old-earthers interpret these same fossils as evidence of God's good "creative" work! It is difficult to imagine more diametrically opposing views. I will leave it to the reader to decide whether the world-wide death and destruction we see in the fossil record is more consistent with God's work as a loving creator or with His work as a wrathful destroyer.

The major problem with accepting the geological column and its fossils as evidence of God's "creative work" is that all fossils (including human fossils) are dead - stone-dead, in fact. This requires us to believe that suffering and death (for both man and animals) have been with us from the very beginning of Creation; indeed, that God intended for us to suffer and die. But the Bible teaches that God created everything perfectly and pronounced it "good." Suffering and death are not natural, but rather came into the world through the sin of disobedience. This is the very essence and meaning of the Bible, and the purpose of Christ's redemptive work.

ESSAY 21: Making Man Out of Monkeys

The bitterest pill to swallow for any Christian who attempts to "make peace" with Darwin is the presumed animal ancestry of man. Even many Christians who uncritically accept evolutionary dogma as "God's way of creating" try to elevate man and his origin above that of the beasts. Evolutionists attempt to soften the blow by assuring us that man didn't exactly evolve from apes (tailless monkeys) but rather from ape-like creatures. This is mere semantics, as may be seen from the fact that many of the presumed animal ancestors of man have been given scientific names which include the word *pithecus* (derived from the Greek meaning ape) just like most living apes. The much touted "human ancestor" commonly known as "Lucy," for example, has the scientific name *Australopithecus afarensis* (meaning southern ape from the Afar triangle of Africa), though evolutionists often refer to this ape as a "woman"! But what exactly is the evidence for the ape ancestry of man and how compelling is it?

The first and most important thing we should understand is that evolutionists begin with the assumption that man has in fact evolved from apes. No paleoanthropologist (one who studies the fossil evidence for man's origin) would dare to seriously raise the question "did man evolve from apes?" The only permissible question is "from which apes did man evolve?" Since evolutionists generally do not believe that man evolved from any ape that is now living, they look to extinct apes in the fossil record to provide them with their desired evidence. Specifically, they look for any anatomical feature that looks "intermediate" between that of apes and man. Fossil apes having such features are declared to be ancestral to man (or at least collateral relatives) and are called hominids. Living apes, on the other hand, are not considered to be "hominids" - they only sort of look like humans. Still, evolutionists are willing to accept certain trivial similarities between extinct apes and men as "proof" of ancestry.

Fossils of so-called "hominids" are typically fragmentary and sufficiently rare that even many who presume to study the origin of man have never actually handled one. Many scientific papers on human evolution are based on only casts of original specimens (or even on published photos, measurements, and descriptions of them). Naturally, there is a great premium on first-hand studies of real "hominid" fossils but such opportunities are typically confined to those lucky enough to find them, and the chosen few they permit to handle their fragile specimens. Since there is much more prestige in finding an ancestor of man than an ancestor of living apes (or worse yet, merely an extinct ape), there is immense pressure on paleoanthropologists to decide in favor of "hominid" status for any of the exceedingly rare, ape-like fossils they find. It would seem that the living apes have pretty much been left to find their own ancestors.

With rare exception, primate fossils consist of bones and teeth rather than the soft organs of the body. Because of their relative hardness, teeth, jaws and basal skull fragments are the most frequently found primate fossils. Much of the evidence for the ape ancestry of man is based on similarities in teeth and jaws. In contrast to man, apes tend to have large incisor and canine teeth which are relatively larger than their molars. In addition, there is typically a broad gap between the incisor and canine teeth of apes. Finally, the jaws tend to be more U-shaped in apes and more parabolic (like the St. Louis Arch) in man.

One of the problems in identifying evolutionary "intermediates" is the normal range of variations that occur among both fossil and living species of apes and humans. The normal human jaw, for example, may vary among individuals from parabolic (human-like) to U-shaped (ape-like), while some living species of apes, like the Galada baboons, have relatively large molars (human-like). It seems almost certain that teeth tell us more about an organism's diet and feeding habits than its supposed evolution. Still, impressionable artists have not hesitated to illustrate entire "ape-men" from nothing more than a single tooth. In the early 1920's, the "ape-man" *Hesperopithecus* (which consisted of a single tooth) was pictured in the *London Illustrated News* complete with the tooth's wife, children, domestic animals, and cave! This tooth, known as "Nebraska man" was used by experts as compelling evidence for human evolution during the Scopes trial in

1925, but in 1927 parts of the skeleton were found and Nebraska man was downgraded to an extinct pig!

The most eagerly sought after evidence in fossil "hominids" is any anatomical feature that suggests bipedality (the ability to walk on two legs). Humans walk in a bipedal fashion (as do birds and kangaroos), so any evidence of bipedality in fossil apes is considered by evolutionists to be compelling evidence for human ancestry. The distinctive human gait requires the complex integration of many skeletal and muscular features in our hips, legs and feet. Thus, evolutionists closely examine the hip bones (pelvis), thigh bones (femur), leg bones (tibia and fibula), and foot bones (especially the toes) of fossil apes in an effort to detect any anatomical features consistent with bipedality.

Evolutionists are particularly interested in the angle at which the femur and the tibia meet at the knee (called the carrying angle). Humans are able to keep their weight over their feet while walking because their femurs converge toward the knees forming a carrying angle of approximately 9 degrees with the tibia (we're sort of knock-kneed). In contrast, chimpanzees and gorillas have widespread legs with a carrying angle of essentially 0 degrees. These animals manage to keep their weight over their feet when walking by swinging their body from side to side in the familiar "ape-walk." Evolutionists assume that fossil apes with a high carrying angle (human-like) were bipedal and thus evolving into man. The south African australopithicines (like Lucy) are considered to be our ancestors largely because they had a carrying angle of about 15 degrees. Many evolutionists now argue, however, that this high carrying angle might actually indicate that australopithicines were adept tree climbers! Among nonhuman living primates, the highest carrying angles (values comparable to man) are found in the orangutan and spider monkey - both exceptionally adept tree climbers though capable of at least a clumsy bipedal gait on the ground. The point is that there are living tree-dwelling apes and monkeys with some of the same anatomical features that evolutionists consider as evidence for bipedality, yet no one suggests that these animals are either our ancestors or descendants.

Australopithicines (especially "Lucy") are often depicted as having hands and feet identical to modern man which, if true, might strongly suggest human ancestry. A live-appearing mannequin of "Lucy" in the Living World exhibit at the St. Louis Zoo, for example, shows virtually human hands and feet on a shapely (though hairy) human-like female body with an obviously ape-like head. Lucy stands erect in a deeply pensive pose with her right elbow resting on the wrist of her crooked left arm and with her right forefinger curled under her chin, her eyes gazing off into the distance as if she were contemplating the mind of Newton. Any uncritical visitor seeing this exhibit would be inclined to think they had seen a true "ape-woman." Few visitors are aware that this is a misrepresentation of what is actually known about the fossil ape *Australopithecus afarensis*. While the "Lucy" fossil itself lacks both hands and feet, several other known specimens of *A. afarensis* include these important bones and all show evidence of the long curved fingers and toes characteristic of tree dwelling primates! Paleoanthropologists Jack Stern and Randall Sussman (*American Journal of Physical Anthropology*, 1983, Vol. 60, pages 279-317) have reported that the hands of this species are "surprisingly similar to hands found in the small end of the pygmy chimpanzee-common chimpanzee range." They report that the feet, like the hands, are "long, curved and heavily muscled" much like those of living primates that engage in tree climbing as well as bipedality. The authors remind us that no living primate has such hands and feet "for any purpose other than to meet the demands of full or part-time arboreal (tree dwelling) life."

We have seen how evolutionists have used australopithicines to make man out of monkeys, we will next see how they have used Neanderthal man to make monkeys out of men.

ESSAY 22: Making Monkeys Out of Man

The evolutionist's notion that man evolved by chance from ape-like creatures is largely based upon certain anatomical similarities between apes and men. Being convinced that such similarities "prove" an evolutionary relationship, paleoanthropologists have declared certain fossil apes to be particularly "man-like" and, thus, ancestral to man. Similarly, in an effort to fill the gap between apes and men, certain fossil men have been declared to be "ape-like" and, thus, ancestral to at least "modern" man. You might say this latter effort seeks to make a "monkey" out of man.

Humans are rarely found in the fossil record. This may be partly explained by the sort of habitat in which man typically lived, and by the extraordinary conditions required for fossilization (sudden burial in water-borne sediment which hardens before decomposition of the bones). The best known human fossils are of Cro-Magnon man (whose marvelous paintings are found on the walls of caves in France) and Neanderthal man. Both are true men and are accordingly classified today as *Homo sapiens*.

Neanderthal man was first discovered in 1856 by workmen digging in a limestone cave in the Neander Valley near Dusseldorf, Germany. This specimen consisted of a fossilized skull cap, two femurs, two humeri and other bone fragments. The fossil bones were examined by an anatomist (professor Schaafhausen) who concluded they were human. At first, not much attention was given to these finds but, with the publication of Darwin's *Origin of Species* in 1859, the search began for the imagined "ape-like ancestors" of man. William King, an Irish geologist, re-examined the fossil skull of Neanderthal man and promptly declared that the "thoughts and desires which once dwelt within it never soared beyond those of a brute." Clearly, anatomists are no match for geologists when it comes to discerning fossilized thoughts! Darwinians argued that Neanderthal man was an ape-like creature, while many critical of Darwin (like the great anatomist Rudolph Virchow) argued that Neanderthals were human in every respect, though some appeared to be suffering from rickets or arthritis.

Over 300 Neanderthal specimens have now been found scattered throughout most of the world, including Belgium, China, Central and North Africa, Iraq, Czechoslovakia, Hungary, Greece, north western Europe and the Middle East. This race of men was characterized by prominent eyebrow ridges (like modern Australian aborigines), low forehead, long narrow skull, a protruding upper jaw, and a strong lower jaw with a short chin. They were deep-chested, large-boned individuals with a powerful build. It should be emphasized, however, that none of these features fall outside the range of normal human anatomy. Interestingly, the brain size (based on cranial capacity) of Neanderthal man was actually larger than average for that of modern man, though this is rarely emphasized. Anthropologists have long attempted to correlate brain size with intelligence and some have even biased their measurements of cranial capacity in an apparent effort to down-grade the intelligence of "less favored" races, such as blacks and Indians (see *The Mismeasure of Man* by evolutionist Steven J. Gould, W. W. Norton & Company, 1981). There is, in fact, a broad range of variation in brain size among normal humans, but there is no known relationship between mere brain size and intelligence.

Despite the overwhelming evidence that Neanderthals were simply a race of stocky humans, imaginative artists (with the encouragement of some evolutionists) have consistently rendered them as stooped "ape-men." For years, visitors entering Chicago's Field Museum of Natural History were obliged to pass between a frightening pair of life-sized statues of a very bestial appearing Neanderthal couple. Today, the Museum has finally replaced these erroneous statues with a more accurate representation of erect standing human-like Neanderthals. The old ones, however, were moved to the second floor near the dinosaur skeletons, where they will continue to fuel the imaginations of generations of school children, who will believe they have actually seen "ape-men"!

Most of the misconceptions about Neanderthal man resulted from the claims of a Frenchman (Marcelin Boule) who, in 1908, studied two Neanderthal skeletons that were found in France (LeMoustier and La Chapelle-aux-Saints). Boule declared Neanderthal men to be anatomically

and intellectually inferior brutes who were more closely related to apes than humans. He asserted they had a slumped posture, a "monkey-like" arrangement of certain spinal vertebrae, and even claimed that their feet were of a "grasping type" (like those of gorillas and chimpanzees). Boule concluded that Neanderthal man could not have walked erectly, but rather must have walked in a clumsy fashion. These highly biased and inaccurate views prevailed and were even expanded by many other evolutionists up to the mid-1950s.

In 1957, the anatomists William Straus and A. J. Cave examined one of the French Neanderthals (La Chapelle-aux-Saints) and determined that the individual suffered from severe arthritis (as suggested by Virchow nearly 100 years earlier), which affected the vertebrae and bent the posture. The jaw also had been affected. These observations are consistent with the Ice Age climate in which Neanderthals had lived. They may well have sought shelter in caves and this, together with poor diet and lack of sunlight, could easily have led to diseases that affect the bones, such as rickets. In any event, the big toe was definitely not prehensile (grasping) as Boule had claimed, and the pelvis was not found to be ape-like. In their report they commented that: "if he (Neanderthal man) could be reincarnated and placed in a New York subway provided he were bathed, shaved and dressed in modern clothing it is doubtful whether he would attract any more attention than some of its other denizens." (Quarterly Review of Biology, December, vol. 32, pp. 348-63) In fact, today one could dispense with the bath and the shave!

Perhaps our best impression of what Neanderthal man actually looked like comes from the work of the forensic artist, Jay Matterens. Matterens, who specializes in "fleshing out" skeletons with modeling clay to aid in the identification of homicide victims, worked closely with anthropologists to "flesh out" a skeleton of Neanderthal man. The result, pictured prominently on the cover of the magazine Science 81 (October, 1981), was essentially indistinguishable from modern man! Matterens admitted that he had to fight against his preconceptions to reconstruct what the measurements showed. The accompanying article in the magazine pointed out that: "in the view of many paleoanthropologists, the story of human evolution has been fictionalized to suit needs other than scientific rigor."

In addition to anatomical evidence, there is a growing body of cultural evidence for the fully human status of Neanderthals. He buried his dead and had elaborate funeral customs that included arranging the body and covering it with flowers. He made a variety of stone tools and worked with skins and leather. There is even evidence which suggests that he engaged in medical care. Some Neanderthal specimens show evidence of survival to old age despite numerous wounds, broken bones, blindness and disease. This suggests that these individuals were cared for and nurtured by others who showed human compassion.

Still, efforts continue to be made to somehow dehumanize Neanderthal man. Some investigators have insisted that Neanderthal man was anatomically incapable of speech but recent studies show that he had a laryngeal anatomy entirely consistent with speech. One of the world's foremost authorities on Neanderthal man, Erik Trinkaus, concludes: "Detailed comparisons of Neanderthal skeletal remains with those of modern humans have shown that there is nothing in Neanderthal anatomy that conclusively indicates locomotor, manipulative, intellectual or linguistic abilities inferior to those of modern humans" (Natural History Vol. 87, p. 10, 1978). Why then are there continued efforts to make apes out of man and man out of apes?

In one of the most remarkably frank and candid assessments of the whole subject and methodology of paleoanthropology, Dr. David Pilbeam (professor of anthropology at Yale) suggested 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. But that is heresy" (American Scientist Vol. 66, p. 379, May/June 1978). Oh, that these heretical words were printed as a warning on every text book, magazine, newspaper article and statue that presumes to deal with the bestial origin of man!