03

NATURAL SELECTION VS. EVOLUTION

We have no acceptable theory of evolution at the present time. There is none; and I cannot accept the theory that I teach to my students each year. Let me explain. I teach the synthetic theory known as the neo-Darwinian one, for one reason only; not because it's good, we know it is bad, but because there isn't any other. Whilst waiting to find something better you are taught something which is known to be inexact, which is a first approximation ...

–Professor Jerome Lejeune, in a lecture given in Paris on March 17, 1985, translated by Peter Wilders

What You Will Learn

Textbooks present evolution in two different ways—small, observable changes (natural selection, speciation, adaptation) and large, unobservable changes (molecules-to-man evolution). They show evidence for the former and then conclude that this proves that the latter took place as well.

As our understanding of genetics has improved, it has become increasingly clear that mutations + time + chance do not equal evolution. All observed mutations demonstrate a loss of genetic information from the genetic code, or they are neutral. Evolution claims that the process has no direction or goal. If you look at the complexity of the "first" organism, it must be accepted that a massive amount of information has been produced to explain the variety of life we see today. Mutations cannot generate new genetic information; so they cannot be used to explain how evolution has proceeded from a cell with less information than is present in modern cells.

Despite the claims of evolution, the appearance of new species, antibiotic resistance in bacteria, pesticide resistance, and sickle-cell anemia are not evidence in favor of evolution. They do, however, demonstrate the principle of natural selection acting on existing traits—a concept that creationists and evolutionists agree on. The creationist model of how life spread across the globe after the Flood of Genesis uses many of the same principles of natural selection and adaptive radiation that are used in the evolution model. One of the main differences is that the biblical creation model recognizes that one kind cannot change into another and that the changes are a result of variation within the created kinds—not descent from a single common ancestor. As a result of the Curse, genetic mutations, representing a loss of information, have been accumulating, but these do not cause new kinds to emerge. Accepting the idea of a single common ancestor denies the authority of God's Word.

What Your Textbook Says about Natural Selection and Evolution

Evolutionary Concept	Glencoe	PH-Campbell	PH-Miller	Holt	Articles
Evolution is believed by most scientists and is the unifying theory of biology.	9–10, 392–393	T290, T343	T366–367, 367, 369, 386, 410	T6, 9, 276, 283, T410–411	3:1, 3:7
Evolution is not observable on a human timescale.	396–397	—	447	—	3:2, 3:7, 3:11, 3:13, 3:19, 3:24, 3:27, 3:28
Origin of Species provided a unifying explanation for the history of life on earth.	396	39, 297	374–375, T374, 378–379	277–280	3:1, 3:3, 3:4, 3:13, 3:24
Genetic drift in isolated populations	280	327–329	T371, 372, 400, 404–405, T405, 406–409, T407–T409, 439	281, 292, 328	3:5, 3:10, 3:11, 3:12, 3:13, 3:15, 3:22
All life has a single common ancestor.	—	304	369	283	3:6, 3:7, 3:8, 3:13, 3:19
Mutation is the raw material for evolution.	—	310, 314, 243	17, 308, 392, 394–395, T406, 406–409	147, T160, 281, 416	3:1, 3:10, 3:13, 3:15, 3:16, 3:19, 3:21, 3:22, 3:23, 3:28

Evolutionary Concept	Glencoe	PH-Campbell	PH-Miller	Holt	Articles
Mechanisms of evolution	—	—	T262, 376, T376, 393, 401	326, 329, T330	3:10, 3:11, 3:12, 3:13, 3:15, 3:16, 3:19, 3:22, 3:23, 3:27, 3:28, 3:35
Rapid adaptation/ natural selection	—	316	435, 439	290	3:1, 3:5, 3:11, 3:12, 3:13, 3:27
Macroevolution and microevolution	—	311, 324–325	435	—	3:1, 3:12, 3:13, 3:27
Coevolution in symbiotic relationships	—	—	441	362–364, T362, 447	3:7, 3:14
Mendelian genetics	253	206, 310	263–266, 393	162–169	3:10, 3:13, 3:15, 3:21
Polyploidy generally causes death in animals.	273	250	321	—	3:16
Evolution has no purpose or direction.	—	T295	T748	T307	3:4, 3:17, 3:18, 3:19
Evidence is correlated from many areas to support evolution.	403	299–300, 344	386	283, 287	3:7
Natural selection recycles functions of traits.	—	331–333	—	—	3:19

Evolutionary Concept	Glencoe	PH-Campbell	PH-Miller	Holt	Articles
Intelligent design of eyes is not necessary.	—	331–332, 334	—	—	3:2, 3:4, 3:19
Types of mutations	280	—	302, 307–308, T310, T394	124, T123, 180, 219, 327, 216	3:10, 3:13, 3:16
DNA requires proteins to produce proteins.	293	125, 238–241	300–301	208–210	3:20
DNA has evolved to maintain its integrity.	296	—	297	—	3:6, 3:15, 3:21
Beneficial mutations are evidence for evolution.	296–297	314	308	291, 332	3:10, 3:13, 3:15, 3:22, 3:28
Definitions of natural selection, adaptation, and evolution	297	17–18, T16	T2, 16, 381	279, 288–291, 825	1:3, 3:1, 3:13
Definition of evolution	10	298	20, 369	825	1:3, 3:2, 3:4, 3:13, 3:23
Process of evolution	392	290, 305	125, 377, 394, 397, 435, T439, 878–882	—	1:3, 3:13, 3:23, 3:28, 3:35
Natural selection drives evolution.	392	17–18	380, 386, 397–398, T399, 872, 878	—	1:3, 3:1, 3:10, 3:11, 3:12, 3:13, 3:22, 3:23, 3:27

Evolutionary Concept	Glencoe	PH-Campbell	PH-Miller	Holt	Articles
Uniformitarian geology is the basis of the timescale needed for biological evolution.	393, 466–469	295, 356	374–375	277	3:13, 3:25, 3:29
People used to believe the earth was less than 10,000 years old.	367	292	373	277	3:26
Peppered moth and coloration as evolution	397	T296	—	—	3:15, 3:13, 3:27
Pesticide resistance is an example of evolution.	—	307–308	T367, 410	T289, 332, 688	3:13, 3:28
Antibiotic resistance and information in DNA	399, 498	18, 266, 268, 317–319, 364, 370	T367, T386, 403, 410, 487	T279, 289, 449	3:13, 3:22, 3:28
Whales evolved from a wolf-like, hoofed ancestor.	400	300, 344	—	T267, 284–285, T308, 814	3:9, 3:29
Camel and horse evolution series based on fossil record.	400	—	439	—	3:29, 3:30
Homology is evidence of common ancestor.	400, 450	301, 304, 343	384–385	286, 307, 594	3:6, 3:7, 3:33
Vestigial organs demonstrate evolution.	401–402	302	384, T384	T285, 286	3:7, 3:8
Whale pelvis is vestigial.	402	302	—	286	3:8, 3:9
Embryonic recapitulation demonstrates descent from a common ancestor.	402	302–303	384–385, T385	286	3:7, 3:31

Evolutionary Concept	Glencoe	PH-Campbell	PH-Miller	Holt	Articles
Hox genes demonstrate evolutionary relationships.	—	285, 333–334	312, 440, T440	—	3:7, 3:32
Amino acid sequence of proteins determines evolutionary relationships.	403	303–304	865	287, T308	3:6, 3:7
Speciation and adaptive radiation (divergent evolution) demonstrate evolution.	395–397, 404–413	305–306, 568–569	436	—	3:1, 3:5, 3:6, 3:11, 3:12, 3:13, 3:28
Punctuated equilibrium describes gaps in fossil record.	411	329–330	439, T439	282	3:35
Convergent evolution demonstrates evolution of two organisms to look like one another.	413	33, 39, T101, 343, T383, T391, T572	383, T383, 436–437, T436, 828, 832	307	3:6, 3:7, 3:33
Malaria and sickle-cell anemia are evidence of evolution.	508–509	317	347–348, T402	8, T180, 180, 329	3:23, 3:28, 3:34
Diet can be inferred from tooth structure.	843, 844	—	—	—	3:30, 3:36
Genetic engineering shows how humans can interfere with or accelerate evolution.	1076–1079	274–277	322–333, 360	228–243	3:37
Brain complexity is evidence of evolution.	1090–1091	—		—	3:4, 3:6
Viral evolution affects humans.	—	—	T367, 483	934	3:38

Note: Page numbers preceded by "T" indicate items from the teacher notes found in the margins of the Teacher's Edition.

What We Really Know about Natural Selection and Evolution

The ideas of natural selection, speciation, adaptation, and evolution are often used interchangeably by secular scientists. All three of the textbooks reviewed use the terms in this way. When scientists and authors use *evolution* to mean both "change in features over time" and "the history of life on earth," it is difficult to know which definition is being used in each instance. This is often used as a bait-and-switch technique (equivocation). When small changes that arise as a result of the loss of information are used as evidence for molecules-to-man evolution, the switch has occurred. Let's define the terms and see where the switch is happening.

Natural Selection: the process by which individuals possessing a set of traits that confer a survival advantage in a given environment tend to leave more offspring on average that survive to reproduce in the next generation.

Natural selection is an observable process that falls into the category of operational science. We have observed mosquitoes, birds, and many microorganisms undergoing change in relatively short periods of time. New species have been observed to arise. Biblical creationists agree with evolutionists on most of the ideas associated with natural selection, except the idea that natural selection leads to molecules-to-man evolution.

Speciation: the process of change in a population that produces distinct populations which rarely naturally interbreed due to geographic isolation or other factors.

Speciation is observable and fits into the category of operational science. Speciation has never been observed to turn one kind of animal into another. Lions *(Panthera leo)* and tigers *(Panthera tigris)* are both members of the cat kind, but they are considered different species primarily due to their geographic isolation. However, it is possible to mate the two. Ligers (male lion and female tiger) and tigons (male tigers and female lions) are produced (with varying degrees of fertility). These two species came from the origi-

nal cat kind that would have been present on Noah's Ark.

Adaptation: a physical trait or behavior due to inherited characteristics that gives an organism the ability to survive in a given environment.

Evolutionists often look at a characteristic of an organism and assume that it was produced through a gradual series of changes and call it an adaptation to a given environment. To an evolutionist, legs on tetrapods are an adaptation that arose as a fish's fins became adapted to crawling in a shallow stream, providing some form of advantage. The fins with more bones were better adapted to a life partially lived on the land. Fins that developed bones attached to a pectoral girdle (another set of bones that had to develop) gave

The two tree frogs shown in this figure have been separated by a physical barrier. They certainly had a common ancestor with more genetic variety. As the two populations became separated, certain genes were lost and two new species eventually formed. The text does not explain how they evolved; it just states it as a fact. The formation of new species as a result of loss of information is the opposite type of change required to demonstrate molecules-to-man evolution. This, and other examples found in the textbooks, confirms the biblical creationist model of variation within a kind.

Figure 15.15
When geographic isolation divides a population of tree frogs, the individuals no longer mate across populations. **Explain and Illustrate** ***How could geographic isolation result in natural selection and possibly new species?***

A Tree frogs are a single population.

B The formation of a river may divide the frogs into two populations. A new form may appear in one population.

C Over time, the divided populations may become two species that may no longer interbreed, even if reunited.

Glencoe 408

an advantage to those individuals that wandered onto land to find food or avoid predators. The problems with this scenario are in the amount of time such a change would require and the lack of a mechanism to cause the change.

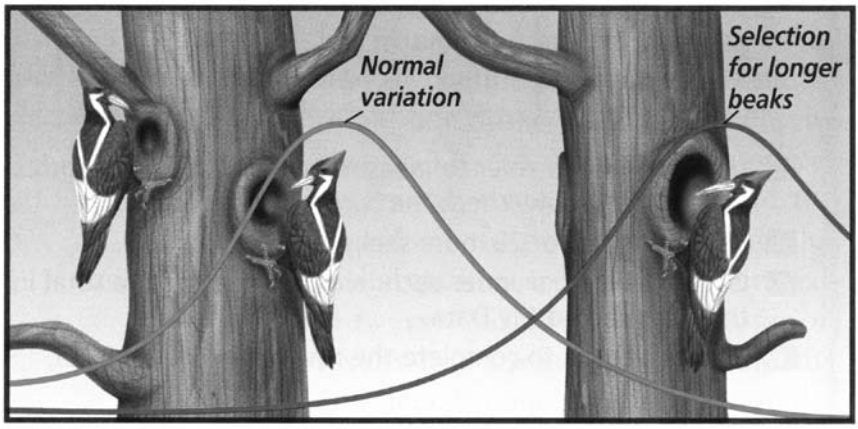
Evolutionary biologists assume, based on geologic interpretations, that there have been billions of years for this process to occur. But if long ages did not exist, the hypothesis cannot be true.

The other requirement, a mechanism for change, is also assumed to exist—even though it has never been observed. We mentioned earlier that natural selection tends to delete information from the population. If natural selection is the mechanism that explains the successive adaptations in the fish fin example above, it must provide new genetic information. To produce the new bones in the fins requires an elaborate orchestration of biologic processes. The bones don't just have to be present; they must develop at the right time in the embryo, have their shape and size predetermined by the DNA sequence, be attached to the correct tendons, ligaments, and blood vessels, attach to the bones of the pectoral girdle, and so on. The amount of information required for this seemingly simple transformation cannot be provided by a process that generally deletes information from the genome.

Biblical creationists consider major structures to be part of the original design provided by God. Modifications to those structures, adaptations, occur due to genetic recombination, random mutations, and natural selection. These structures do not arise from the modification of similar structures of another kind of animal. The beak of the woodpecker, for example, did not arise from the beak of a theropod dinosaur ancestor; it was an originally designed structure. The difference in beak shapes among woodpeckers fits with the idea of natural selection leading to changes within a population of woodpeckers—within the created kind.

Consider a woodpecker pair getting off the Ark. The pair may contain genes (information) for long and short beaks. As the birds spread out into the lush new world growing in the newly deposited soil, they produce offspring that contain both long-beak and short-beak genes. (Although the actual control of beak growth is complex, we will assume that long is dominant over short for this simplistic example.) Areas populated by trees with thick, soft bark would tend to select for woodpeckers with longer beaks. Areas where the

The variation within the woodpecker population is capable of producing birds with longer beaks, but there is no evidence that new information has been produced. This explains how the different varieties of animals and plants that we see today are a result of diversification after the Flood.



B **Directional selection** favors one of the extreme variations of a trait and can lead to the rapid evolution of a population.

Glencoe 408

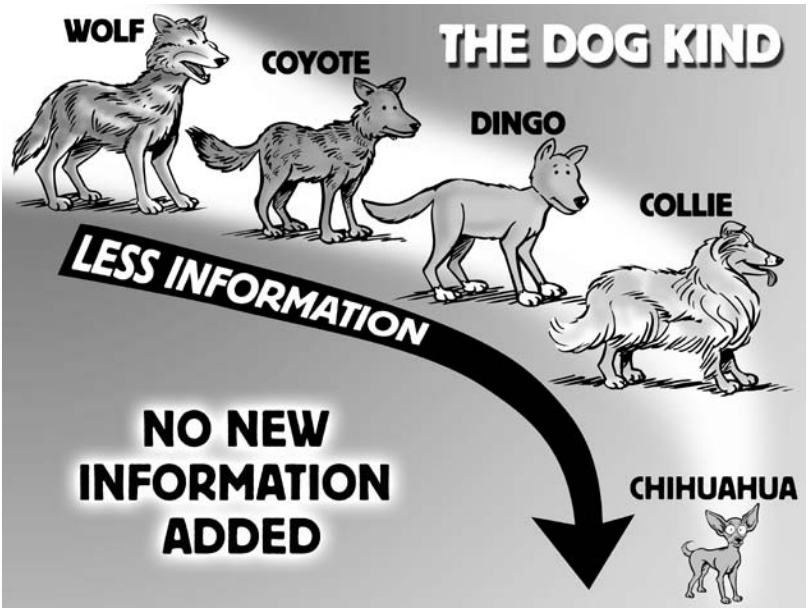
bark was thinner and harder would tend to be populated by woodpeckers with shorter beaks. Two new species, with slightly different adaptations, could arise if the two populations were geographically separated. The population of short-beaked woodpeckers would have lost the information for long beaks. No more long-beaked woodpeckers would be produced without a significant addition of genetic information affecting the beak length. The long-beaked woodpeckers would still have the ability to produce short-beaked offspring, but they would be less able to compete, and those genes would tend to decrease in frequency in the population. Due to their isolation, two new species of woodpecker would develop, but within their kind. Observational science supports this type of subtle change within a kind but not molecules-to-man evolution, as we will see in the next section.

Evolution: all life on earth has come about through descent with modification from a single common ancestor (a hypothetical, primitive, single-celled organism).

Evolution is generally assumed to happen as a natural consequence of natural selection. However, no direct observational evidence supports the concept of a fish turning, however gradually, into an amphibian. Evolutionists will argue that there has simply not been enough time to observe such changes. Man has only been recording information that would be useful for a short period of time relative to the immense amounts of time required by evolutionary theory. This raises the question, "Is evolution a valid scientific idea since it cannot be observed in experiments and repeated to show that the conclusions are valid?"

The fact that evolutionary processes, on the scale of millions of years, cannot be observed, tested, repeated, or falsified places them in the category of historical science. In secular science, evaluating historical events is considered just as acceptable as conducting laboratory experiments when it comes to developing scientific theories. Since scientific theories are subject to change, it is acceptable to work within an admittedly deficient framework until a better or more reasonable framework can be found.

A major problem for evolution, as mentioned above, is the huge increase in information content of organisms through time. Evolutionary theory accepts additions and deletions of information as evidence of evolution of a population. The problem is that through the imagined history of life on earth, the information content of the genomes of organisms must have increased dramatically. Beginning with the most primitive form of life, we have a relatively simple genome compared to the genomes that we see today. Mutations are said to provide the fuel for the evolutionary engine. Virtually all observed mutations result in a loss in the information content of a genome. There would need to be some way to consistently add information to the genome to arrive at palm trees and people from a simple single-celled organism—the hypothetical common ancestor of all life on earth. Evolutionists have failed to answer the question, "Where did all the new information come from since mutations are known to reduce information?" You cannot expect evolution, which requires a net gain in information over millions of years, to occur as a result of mutation and natural selection. Natural selection, evolution's supposed mechanism, causes a loss of information and can only act on traits that are already present! (The origin of the information is discussed in chapter 5.)



We have observed the change in dogs over time, but that doesn't mean that evolution has occurred. You can breed wolves to get to chihuahuas, but you can't breed chihuahuas to get wolves—variation in the genetic information has been lost. Darwin used this type of change as evidence without an understanding of the limits of genetic change that are known today.

Creationists agree with the idea of "descent with modification" but not with the notion of a single common ancestor. To accept a common ancestor for all life on earth requires a rejection of the biblical account of creation recorded in Genesis and corroborated by many other Scriptures. The order of events of evolutionary history cannot be reconciled with the account recorded in Genesis 1, without compromising one or the other. The philosophies of evolution and biblical Christianity are not compatible. The examples from the texts below and the articles and books will demonstrate this from a biblical creationist perspective.

Reference Articles

3:1 Natural selection and speciation, Ham, Wieland, and Batten, www.answersingenesis.org/home/area/OneBlood/chapter2.asp

> Evolutionists often set up straw man arguments which suggest that creationists believe life was created just as it is

seen today. Evolutionists demonstrate that there are many examples of change over time in species and suggest they have disproved creationism. This is an inaccurate description of the biblical creationist model of life on earth. Creationists accept change in animals over time—God didn't create poodles—but within the boundaries of the created kinds according to Genesis 1.

Using the dog kind as an example, we can see the amazing variety that was programmed into the DNA from creation. Using basic genetic principles and operational science, we can understand how the great diversity seen in the dogs of the present world could have come from one pair of dogs on Noah's Ark. Using the genes A, B, and C as examples of recessive/dominant traits in dogs, if an AaBbCc male were to mate with an AaBbCc female, there are 27 different combinations (AABBCC … aabbcc) possible in the offspring. If these three genes coded for fur characteristics, we would get dogs with many types of fur—from long and thick to short and thin. As these dogs migrated around the globe after the Flood, they encountered different climates. Those that were better suited to the environment of the cold North survived and passed on the genes for long, thick fur. The opposite was true in the warmer climates. Natural selection is a key component of the explanation of events following the Flood that led to the world we now see.

This type of speciation has been observed to happen very rapidly and involves mixing and expression of the preexisting genetic variability. Not only does natural selection select from already existing information, it causes a loss of information since unfavorable genes are removed from the population. Mutations are not able to add new information to the genome. Not a single mutation has been observed to cause an increase in the amount of information in a genome. The differences in groups of similar organisms that are isolated from one another may eventually become great enough so that the populations no longer interbreed in the wild. This is how new species have formed since the Flood and why the straw man argument set up at the beginning is a false representation of creationist interpretations.

No matter how hard evolutionists try, they cannot explain where the new information that is necessary to turn a reptile into a bird comes from. The typical neo-Darwinian mechanism of mutation, chance, and time cannot generate new information. The failure of evolutionary models to explain how a single cell could have evolved more complex information by additive mutations challenges the entire concept. If we start from the Bible, we begin with the idea of specially created organisms possessing large amounts of genetic variability. These original kinds have undergone mutations—which cause a loss of information—and have been changed into new species by natural selection. In this biblical framework, the history of life makes sense.

3:2 Is evolution a "fact" of science? Thompson, www.apologeticspress.org/articles/1985

In the media, textbooks, and scientific literature the occurrence of evolution has become a "fact." The definition of the word *evolution* has also taken on two different meanings that are not equal. Evolution can be used in the sense of change in a species by natural selection. This is often referred to as microevolution and is accepted by evolutionists and creationists alike as good observational science. This type of evolution allows change within groups but not between groups. The other meaning of evolution involves the idea that all organisms on earth share a common ancestor by descent with modification. This idea is commonly referred to as macroevolution. (AiG does not endorse using the terms "microevolution" and "macroevolution." It is not the amount of change that is different, but the type and direction of change that is different. These terms do not clarify that difference.) The two definitions are often used interchangeably. Typically, textbooks show that new species can form—evolution has occurred—so they argue that it is obvious that evolution, in the molecules-to-man sense, must have occurred. The problem is that just because natural selection and speciation have occurred (and there is strong evidence to support such claims) the claim that all

life has evolved from a common ancestor is based on many assumptions that cannot be ultimately proven.

People believe the ideas of the evolutionary development of life on earth for many reasons: it is all that they have been taught and exposed to, they believe the evidence supports evolution, they do not want to be lumped with people who do not believe in evolution and are often considered to be less intelligent or "backward," evolution has the stamp of approval from real scientists, and evolutionary history allows people to reject the idea of God and legitimize their own immorality. Evaluating the presuppositions behind belief in evolution makes for a much more productive discussion. Two intelligent people can arrive at different conclusions using the same evidence; so their starting assumptions is the most important issue in discussing historical science.

When we deal with the issue of origins, we must realize that no people were there to observe and record the events. When scientists discuss the origins of the universe, the earth, or life on earth, we must realize that the discussion is based on assumptions. These fallible assumptions make the conclusions of the discussion less valid than if the discussion were based on actual observation. Almost all biology books and textbooks written in the last two generations have been written as if these presuppositions were true.

Proponents of the evolutionary worldview expect everyone to accept evolution as fact. This is a difficult case to make when the how, why, when, and where of evolutionary history are sharply contested or unknown by the scientists who insist evolution is a fact.

Evolutionists often claim that creation is not scientific because of the unprovable assumptions that it is based on. The fact that evolution is based on its own set of unprovable, untestable, and unfalsifiable assumptions is recognized by many in the scientific community.

Within the scientific literature, the mathematical and chemical impossibilities of the origin of the universe and life on earth are recognized. Many notable scientists, including Sir Fred Hoyle and Sir Francis Crick, have gone

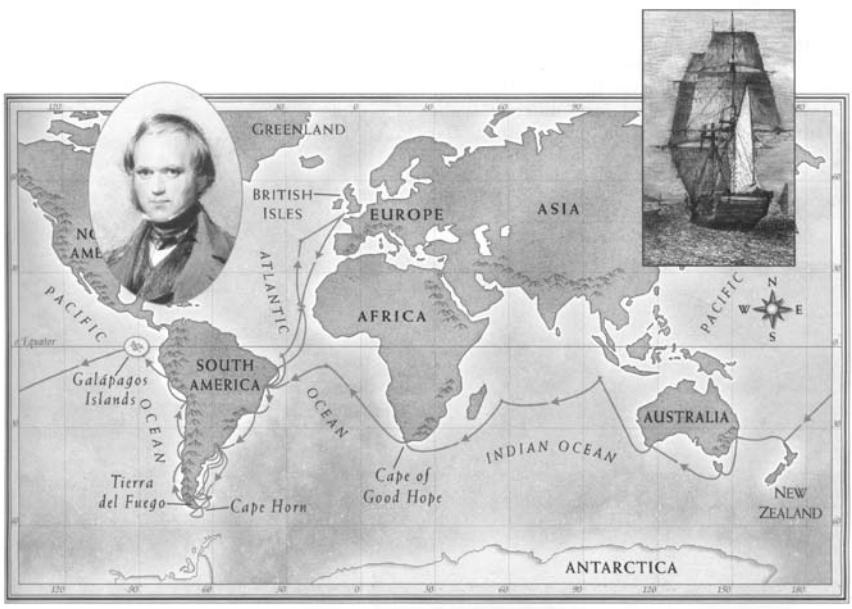
so far as to suggest that life originated on other planets or was brought to earth by an intelligent being. These ideas are no less testable than special creation but avoid invoking God as our Creator.

3:3 Darwin's illegitimate brainchild, Grigg, www.answersingenesis.org/go/brain-child

The idea of natural selection was published well before Darwin wrote *Origin of Species*. Darwin was most likely exposed to the idea in his days as a student in Edinburgh, and those ideas were integrated with the information gathered on his *Beagle* voyage. Several scholars have suggested that Darwin borrowed ideas from the works of many of his predecessors and contemporaries. It is suggested that Darwin failed to give credit to Edward Blyth for seminal ideas because Blyth was a "special creationist" who viewed natural selection in light of selecting among preexisting

PH-Campbell 293

▼ **Figure 14-3** The route of the *Beagle* (top inset) took Darwin around the world during a five-year voyage.



Darwin developed his ideas over many years after his journey aboard the *Beagle*. The idea of natural selection was recognized by creationists before Darwin used it to remove the glory from God.

traits. Darwin is credited with the idea of evolution by natural selection, but it remains impotent in light of modern genetic concepts of information.

3:4 Design without a designer, Parker, www.answersingenesis.org/cec/docs/cfl-pdfs.asp

Darwin grew up in an England that acknowledged a biblical worldview. When he wrote *On the Origin of Species by Means of Natural Selection, or The Preservation of Favoured Races in the Struggle for Life*, he had witnessed a world full of death and disease. How could this be the world created by the God of the Bible? Evolutionary ideas offered people an alternative to a supernatural Creator. Life may appear to be designed, but it is just a product of random changes over millions of years of earth history. This offered people a "scientific" means to reject God and believe in a naturalistic view of the universe. Michael Denton suggests that the chief impact of Darwin's ideas was to make atheism possible and respectable in light of the evidence for a Designer. Darwin's ideas fostered an environment where God was no longer needed—nature was all that was necessary. Darwin's ideas ushered in a pagan era that is now reaching a critical point. The idea that the appearance of design suggests a designer became an invalid argument in the eyes of evolutionists.

3:5 Did God create poodles? Ham, www.answersingenesis.org/go/poodles

Poodles and all other current breeds of dogs are descended from a dog kind that was created on Day 6 and was present on the Ark. The varieties of dogs that we see today, from wolves to coyotes to poodles, are all descendants of the dog kind that came off Noah's Ark. As populations of wild dogs were spreading across the globe, the environment shaped their characteristics through natural selection. As humans began to domesticate dogs, they artificially selected the traits that they desired in populations. The breeds of modern domestic dogs are a result of the diversity that was programmed into the DNA of the original dog kind. All

domestic dogs belong to the same species *Canis familiaris* and can interbreed.

Purebred dogs have many genetic problems that result from close breeding of individuals over time to concentrate desirable traits. Many breeds have hip dysplaysia, vision problems, and blood disorders. We know that these dogs could not have been in the Garden of Eden because God called His creation "very good" and He would not have included these genetic mutations in that description. We do know that all of the breeds did come from a very narrow gene pool, and this is confirmed by secular scientists. In the journal *Science*, November 22, 2002, researchers reported, "The origin of the domestic dog from wolves has been established… . We examined the mitochondrial DNA (mtDNA) sequence variation among 654 domestic dogs representing all major dog populations worldwide, … suggesting a common origin from a single gene pool for all dog populations." It is still important to remember that no new information exists in these mutant forms, only a loss of information from the population, resulting in distinct traits.

3:6 Comparative similarities: homology, Parker, www.answersingenesis.org/cec/docs/cfl-pdfs.asp

Evolutionists use the idea of "descent from a common ancestor" to explain why the forearm bones of a penguin, bat, and human are so similar. This explanation works for traits in your family, but can it be applied to the history of life on earth? The fact that we use such characteristics to classify organisms into groups does not mean that they are related to a common ancestor. The equally valid alternative is that all of these organisms were created by a common Designer who used the same design principles to accomplish similar functions. Although either explanation may appear equally valid, some instances make the case for a Creator clear.

When structures that appear to be similar to one another develop under the control of genes that are not related, the common ancestor idea fails. Evolution would

predict that the structures would be formed from a derived gene that has undergone modification through mutation and natural selection. Frogs and humans supposedly share a common ancestor that would account for the similarity of the limb structures. The problem is that when a frog's digits develop, they grow out from buds in the embryonic hand. In humans, the digits begin as a solid plate and then tissue is removed to form the digits. These entirely different mechanisms produce the same result, but they are not the result of the same genes.

Another challenge to evolutionary explanations is when two structures appear to be homologous but evolutionists know they don't share a common ancestor. Such cases are called "convergent evolution." The eyes of squids and vertebrates are an example where the eyes would be called homologous, but there is no common ancestor to account for the similarities. The common designer argument can once again be used to more easily explain the similarities.

The opposite occurs in "divergent" structures where organisms that appear to be evolutionary cousins have drastically different mechanisms that cannot be explained by a common ancestor. Different light-focusing methods in shrimp provide an example. These systems accomplish the same goal with different and intricate design features—more evidence of their Creator.

Abandoning proof of evolution based on the similarities in large structures, many now look to the similarity in molecular and genetic structure to support evolution. The sporadic presence of hemoglobin in the evolutionary branches of invertebrates is one example. If evolution had occurred, we would expect a predictable pattern—that pattern does not exist. The hemoglobin must have evolved, despite its intricacies, in each of these groups independently. The facts confirm the creationist model of created kinds with great genetic variety and deny evolution from a common ancestor.

The alleged 98% similarity of human and chimp DNA, for example, is often touted as proof of the evolutionary closeness of the two. The 2% difference actually translates into about 60 million base pair differences. The small dif-

ferences in the genes are actually turned into a large difference in the proteins produced.

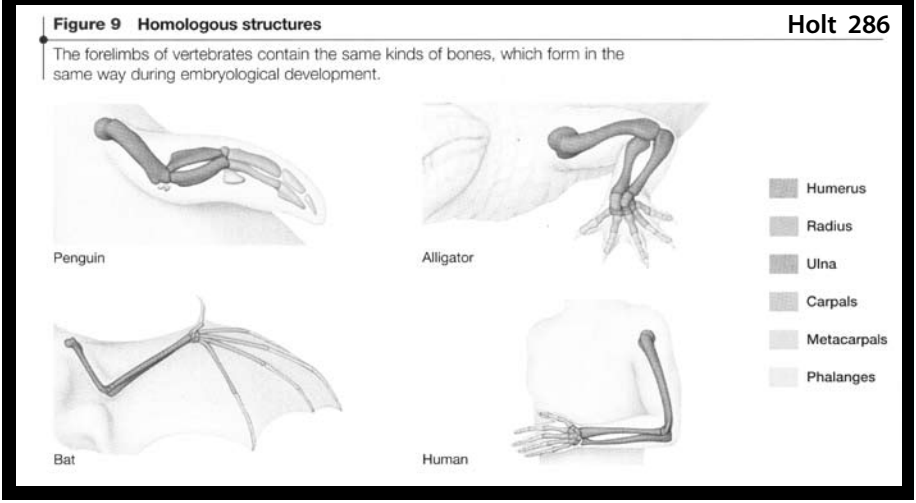
The evidence supports the idea of a matrix of specially created organisms with traits occurring where and when they are needed. Discovering the details of this predictive pattern may someday strengthen the validity of the creationist perspective in the minds of skeptics.

3:7 Does homology provide evidence of evolutionary naturalism? Bergman, www.answersingenesis.org/tj/v15/i1/homology.asp

Evolutionists commonly point to the amazing similarity of muscle, bone, and cell structure and function among living things as evidence that all life on earth evolved from a common protocell ancestor some 3.5 billion years ago. Connecting existing animals to the fossil record extends the comparison back to the alleged beginning of time. The idea of homology as proof for evolution is present in almost every high-school or college text on the subject. Evolutionists argue that the only naturalistic explanation for homology is that all of the organisms evolved from a common ancestor. Design arguments are dismissed in naturalistic/materialistic scientific explanations—even though a common designer can explain the similarities as well.

Before Darwin, creationists used the idea of "ideal archetypes" as evidence for a common designer. The features of comparative anatomy were later reinterpreted by evolutionary biologists to argue for descent from a common ancestor. The real question is: "Does the similarity prove that one structure evolved into another?" Since the requirements are similar for living things, homologous structures would be predicted based on a common designer—structures appear similar because they were designed to accomplish the same task. Tires on bicycles look like tires on motorcycles, with design modifications. Kidneys in a skunk look similar to kidneys in a human because they perform the same task and were designed by a common Designer. Evolutionists tend to accept homologies that fit within the evolutionary framework and set aside those that do not support their predictions; sup-

The presence of homologous structures can actually be interpreted as evidence for a common designer. Contrary to the oversimplified claim in this figure, the forelimbs of vertebrates do not form in the same way. Specifically, in frogs the phalanges form as buds that grow outward and in humans they form from a ridge that develops furrows inward. The fact that the bones can be correlated does not mean that they are evidence of a single common ancestor.[2]



porting structures are called "homologous," while those that don't fit the theory are called "analogous." The existence of similar body plans in organisms that are not considered to be closely related in evolutionary terms is said to demonstrate convergent evolution. The body plan works, so it evolved independently in the two organisms. There are also many exceptions and there is no way to trace many components back to their alleged ancestors due to the incomplete nature of the fossil evidence. Homologous structures cannot exclude the idea of design.

The idea of convergent evolution of analogous structures has trouble explaining exactly how these structures have evolved at different times to be analogous. Wings are supposed to have evolved in at least four different groups as analogous structures. Another example of convergent evolution is the striking similarity between dogs and the Tasmanian tiger (a marsupial). Evolutionists must say that the two evolved independently of one another even though the homology indicates otherwise. Convergent evolution is used as a way to explain away homologies that appear in organisms that aren't

supposed to be closely related.

Evolutionists use embryological development, the presence of vestigial organs, and biochemical and genetic homologies to argue for descent from a common ancestor. Yet the patterns expected from the Darwinian model of evolution are not seen in most instances. On the other hand, homologies confirm the creationist model of a common Designer, the Creator God of the Bible.

3:8 Cutting out a useless vestigial argument, Wilkinson, www.answersingenesis.org/creation/v26/i3/vestigial.asp

The idea of vestigial organs has been passed on for over 100 years. Vestigial organs are said to be remnants of organs that were used by an organism's ancestors but are no longer needed, or they function in a reduced capacity in the modern organism. The human appendix is one of the most used, or misused, examples. Just because we do

Glencoe 402

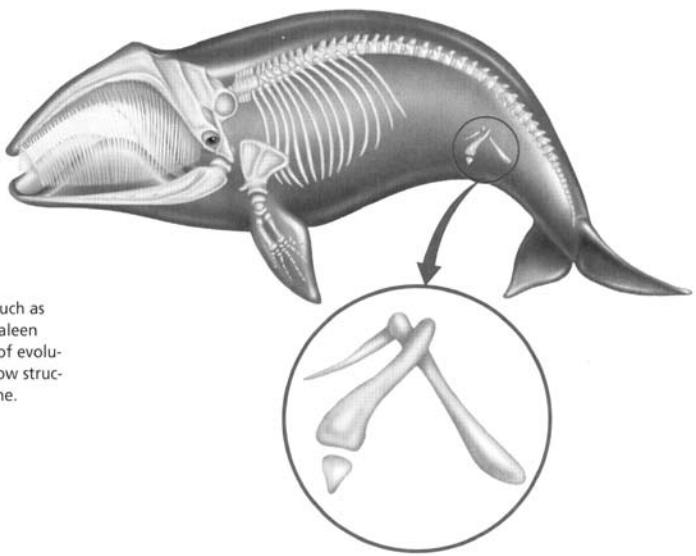


Figure 15.8
Vestigial structures, such as pelvic bones in the baleen whale, are evidence of evolution because they show structural change over time.

The pelvic bone in whales serves as an important anchor for muscles of the reproductive organs. Contrary to the claim in this figure, a structure cannot "show structural change over time." The change over time must be inferred from assumptions about the fossil record and evolution. To know if an organ is vestigial, you must know its ancestors and exactly how the organ was used by those ancestors.

not understand the function of an organ doesn't mean that it serves no function. The appendix was once thought to be an evolutionary leftover, but today we know it serves an important immunological function. Most of the organs that were once thought to be vestigial have been shown to have functions.

3:9 When is a whale a whale? Gish, www.icr.org/article/379

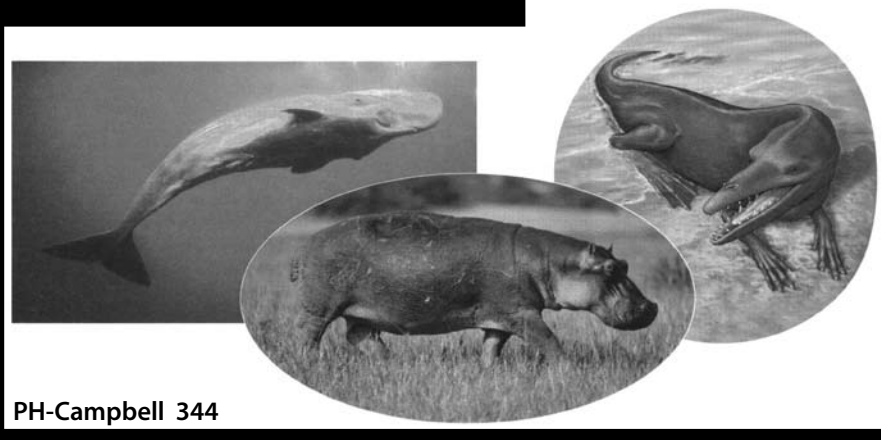
Evolutionists predict the presence of billions of transitional life forms that have existed in earth's history. Despite the presence of 250,000 fossil species, clear transitional forms, which would bolster evolutionary theory, are virtually absent. The situation of transitional forms is glaringly obvious in the case of whales and other marine mammals. The gap in transitional forms was supposedly filled by a partial fossil specimen named *Pakicetus inachus*. Even though the fossil was only a fraction of the skull and a few teeth, the media and scientists portrayed it as a whale-like transitional form. The fact that it was found in a deposit that was likely from a river area puts the interpretation of *Pakicetus* in doubt. (More complete specimens have been found that show *Pakicetus* as a dog-like land animal.)

Fossils of *Ambulocetus natans* were later discovered, and this creature was considered to be a walking whale. Despite the lack of a pelvic girdle (a partial pelvis was found in later specimens), *Ambulocetus* is described as having walked on land much as sea lions do and swimming with a combined motion much as otters and seals do. Why a whale would have hooves on its rear feet and be living near the seashore are questions that are not answered by the fossils.

The deposits containing *Ambulocetus* were found 400 feet higher than where *Pakicetus* was found, but both are supposedly 52 million years old. *Pakicetus* is called the oldest whale (cetacean), but *Ambulocetus* is supposed to display transitional features as land animals turned into whales. Based on teeth alone, several other wolf-like carnivores (mesonychids) are thought to be ancestors as well. The exact arrangement of these groups is disputed, and

There is little agreement about the evolutionary ancestor of whales. Some believe it was an ancestor of hippos and pigs, while others believe it was a group known as mesonychids. The contrary nature of the evidence and the lack of transitional forms in the fossil record strengthen the case for distinct groups of created organisms.

▼ **Figure 15-27** When independent types of evidence support the same hypothesis, the hypothesis is strengthened. Fossil evidence and molecular evidence both suggest that whales (left) and the group of mammals that include hippos (middle) are closely related. The painting at right is an artist's depiction of an early ancestor of whales, based on fossils discovered in the early 2000s.



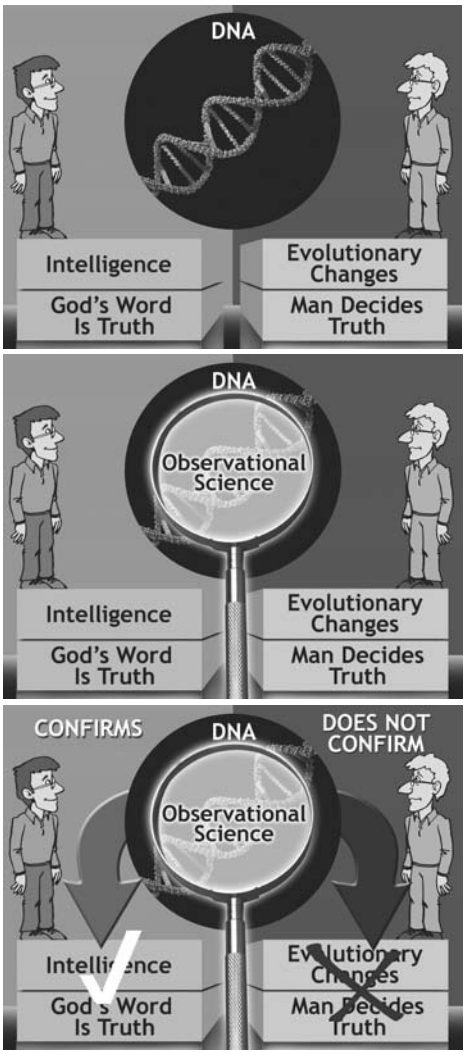
PH-Campbell 344

some consider the mesonychids to be a branch separate from whales.

This interpretation of scant fossil evidence is very imaginative and totally necessary to support the notion that whales evolved from land animals. Such imaginative claims of evolutionary history have been claimed in the past only to be shown false. Further evidence will certainly change the current thinking in drastic ways.

3:10 Are mutations part of the "engine" of evolution? Hodge, preview available at www.answersingenesis.org/home/area/wow/preview/part3.asp

This chapter of *War of the Worldviews* details the common mechanisms of genetic mutation and explains how the mechanisms actually provide examples of a loss of information rather than the creation of new information necessary to explain molecules-to-man evolution. In evolutionary theory, mutations are described as the mechanism that fuels the engine of



Recent advances in the mechanisms of genetics have made it even clearer that the complex information system found in every living cell must be the result of a Designer. Mutations cannot explain how new information can be formed over time.

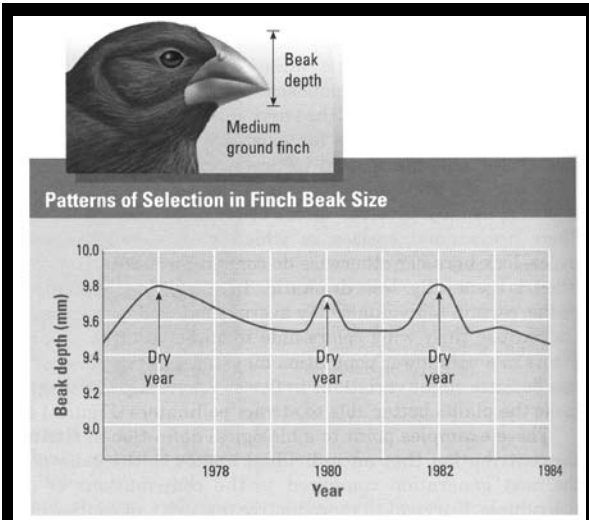
natural selection, creating new organisms as a result. However, the vast majority of mutations are either neutral or cause a loss of information in the genetic code of an individual.

Evolution teaches that mutations have accumulated over millions of years to increase the complexity of organisms on the earth. The Bible teaches that, as a result of Adam's sin, all of creation is in a downward slide—including the genetic information that is in every living cell. The law against marrying close relations was not given to Israel until Leviticus 18. Up to this point, the accumulation of genetic mistakes was apparently not significant enough to cause genetic disorders in the offspring of close family members. Today, with thousands of years of accumulated genetic mistakes in the human gene pool, intermarriage would be much more likely to produce children with genetic disorders. So it seems that the explanation of a genetic degradation since the Curse of Adam actually fits the evidence better than the evolution model of increasing complexity.

3:11 Does the beak of the finch prove Darwin was right? Morris, www.icr.org/article/1135

While on his journey aboard the *Beagle,* Darwin had an extended stay in the Galapagos Islands. He observed a group of finches that were similar to ones he had seen on the mainland 600 miles away. Darwin concluded that these birds were related to the birds on the mainland but had developed unique traits suited to the islands. The structure of the beaks was one of the key characteristics he studied. This interpretation was contrary to some creationists of his day who believed species could not change.

Darwin's conclusion concerning finches matches that of the modern creationist models and demonstrates the variation within a kind that is observed in nature—the finches are still finches. Studies by Drs. Peter and Rosemary Grant over the past decades have shown that the beak size of the finches changes with the climate of the islands they inhabit. Beaks got larger during droughts and smaller during wet periods. All the while, the birds were observed to interbreed. This cannot be considered evidence of evolution in the molecules-to-man sense because there was no



▲ **Figure 14-31** The Grants documented changes in beak size among medium ground finches over many years.

PH-Campbell 316

Often cited as evidence for evolution, the finches of the Galapagos actually demonstrate variation within a kind and the limits of change. Note that the graph shows no net change in the beak size of the finch—it leaves off right where it started. This is certainly evidence that populations can change but not that they can change into new kinds.

net change in the population, even though rapid changes in beak size were observed. The Grants' work is an example of a good study using the principles of operational science arriving at a faulty interpretation based on evolutionary presuppositions.

3:12 Reticulate evolution, Cumming, www.icr.org/article/418

The Grants began studying the finch population of the Galapagos Islands in 1973. They monitored breeding, feeding, and physical data in the birds. The finches' beak shape and size are the main characteristics that are used in classifying them. Even this is difficult with the variability seen in the beaks. One of the biggest problems for the finch studies is the extensive hybridization that occurs between the alleged species. The fact that these hybrids also reproduced should suggest that the three interbreeding species are actually one species. This conclusion was set aside to suggest that hybridization is essential for and accelerates the rate of evolutionary change. The standard species concept was rejected to promote evolution. The hybridization demonstrates the common gene pool that these finches all share and the high degree of variability that was present in the first birds on the islands. The branches and stems in the finch tree of life seem to be more like a thicket with interconnecting lines (termed reticulate evolution). The range of explanations for the process of evolution—it is a "fact" that it has occurred—now includes rapid or gradual, directed or undirected, tree or thicket. The creationist model can still be said to accommodate the data in a much more complete way. Variation within the created kind is confirmed in Darwin's finches.

3:13 Change, yes; evolution, no, Parker, www.answersingenesis.org/cec/docs/cfl-pdfs.asp

The most persuasive—and dangerous—definition for evolution is "change through time." Just because organisms can be observed to change over a period of time does not mean that all life has a common ancestor. If we think of the classic peppered moth example, we started with light and

dark moths (*Biston betularia*) and ended up with light—and dark—colored moths of the same species in different proportions. This exemplifies the creationist idea of variation within a kind.

The natural selection that produces the variety of living things we see today began after Adam rebelled against God. The concept of natural selection was published in a biblical context by Edward Blyth 24 years before Darwin published *Origin of Species*. Blyth is forgotten and Darwin is remembered because of the philosophic and religious implications of his idea, not the scientific applications.

Natural selection has been shown to change organisms but always within the boundaries of the created kinds. This type of change is often termed "microevolution," and the hypothetical type of change that turns fish into philosophers is known as "macroevolution." The large-scale changes through time are simply dramatic extrapolations of the observed phenomenon of natural selection. This degree of extrapolation has no basis in operational science. There are limits to the amount and type of genetic change that can occur—no matter what amount of time is allowed. As an illustration: if you can pedal a bicycle at 10 mph, how long would it take to reach the moon? Bicycles have limits that would make this goal impossible regardless of the time you have to accomplish it.

3:14 Henry Zuill on biology, Ashton, www.answersingenesis.org/home/area/isd/zuill.asp

When we look at the world, we see a complex interaction between living things, from bacteria to grizzly bears; all life depends on other life around it. The complexities of relationships in the ecosystems that make up the earth are just as complex as those seen inside each living cell. Biodiversity and the relationships that it incorporates are a hallmark of the design of the Creator. The more diverse and complex an ecosystem is, the more stable it is. Each species in an ecosystem provides a service, but often providers of that service overlap and each species may perform several

services. Removal of one of the species has an impact on all other species. This interdependency is supposed to demonstrate how organisms have evolved alongside one another. But how did the first organism survive without the second, and vice versa?

Being created together is a simple explanation, and evolution has great difficulty explaining the many instances of species that absolutely depend on one another for their survival. When cells were described as simple blobs of jelly, it was easy to imagine that they arose spontaneously. Today, the complexity of a single cell defies an origin from simple matter. As we understand more about ecological interactions, it is apparent that the evolutionary relationships that were once assumed to be simplistic are now known to have many layers of complexity. The coevolution of complex symbiotic relationships required the existence of relationships. This provides no answer to the origin of the relationships. If the two organisms were created to coexist, a fine-tuning of the relationship would be expected in the creationist framework. Predators and parasites developed in response to the degraded world after the Flood. The created kinds may have changed, but the general relationships present before the Fall probably remained intact to some degree. The relationships seen are a testament to the Creator who instilled order and flexibility into the system. Evolutionary views cannot adequately explain the symbiotic nature of all living things.

3:15 Genetics: no friend of evolution, Lester, www.answersingenesis.org/creation/v20/i2/genetics.asp

Mendel and Darwin were contemporaries whose theories were formulated in different ways and clashed with one another. Mendel used careful observations of traits and calculations to develop his theory of inheritance, while Darwin's ideas were based on erroneous ideas about inheritance. Four factors can be considered in genetic variation: environment, recombination, mutation, and creation. It has long been known that environmental effects on individuals cannot be passed on to offspring as the information is not

contained in the DNA. Mendel recognized the constancy of traits with variation, while Darwin, to some degree, accepted environmental influence on variation. This is evident from Darwin's discussion of the giraffe's neck becoming longer by "the inherited effects of the increased use of parts."

Mendel showed that traits are reorganized independently when they are passed on to offspring. The variation would not always be evident, but it would only reappear if the trait was present in a previous generation. The amount of variation is limited by the information in the parents. Darwin's finches offer an example of this recombination of traits. Mutations are rare in a given gene, and the cell has elaborate machinery to correct mistakes when they occur. Mutations, when they do occur, tend to be neutral but others are harmful. In the creation model, mistakes in the DNA would be expected to have harmful effects. In evolution, these mistakes are supposed to increase information even though in over 3,000 known fruit fly mutations not one produces a fly that has a survival advantage. Examples of mutations that are beneficial to the individual or population are shown to be a loss of information. Natural selection acts to preserve or eliminate traits that are beneficial or harmful, as the creation model would predict. Creation of organisms by a divine Creator is the only mechanism that is adequate to account for the variation seen in the world today. Each of the created kinds started with considerable genetic variability that has caused the variety of life we see today.

3:16 Copying confusion, Williams, www.answersingenesis.org/creation/v25/i4/DNAduplication.asp

Molecules-to-man evolution requires the production of large amounts of new genetic information. In searching for possible mechanisms, evolutionists have sometimes pointed to the ability of cells to make, and retain, multiple copies of their DNA. If this were the source of evolution, one would expect to find a general increase in the amount

of DNA as you move up the evolutionary tree of life. This, however, is not the case. Humans are certainly more complex organisms than bacteria and plants, but they have less DNA in general. The organism with the most DNA is actually a bacterium *(Epulopiscium fishelsoni)* that has at least 25 times as much DNA as a human cell. There are also 85,000 copies of one of its genes per cell. If these extra copies of genes were indeed the raw material for evolutionary mechanisms to act on, this bacterium should be a hallmark of evolutionary adaptation—but it is still a bacterium.

3:17 Man: the image of God, Rendle-Short, www.answersingenesis.org/creation/v4/i1/man.asp

Evolutionists suggest that evolution is a meaningless, undirected process and that humans are a mere accident with no purpose or meaning in the universe. If humans evolved, then there is no eternal life and no God. This obviously flies in the face of Christian beliefs; we were created in the image of God. This view of creation gives our life meaning and purpose. Without God, there is no foundation for morality and each person can do what seems right at the time with no real consequences regarding eternity—eternity does not exist. Man shares characteristics with both animals and God. The Bible equates man and animals on a certain level, but the presence of a spirit and the ability to communicate ideas are attributes man shares with God. We also see God's attributes in human creativity, reasoning, and the ability to express love and pursue the holiness that existed before sin entered the world. The impulse to survive seen in every living thing cannot be described in biological terms; a divine Creator must have instilled this desire in each organism. Evolutionists suggest that the hope of an afterlife is a coping mechanism that has developed as a response to the bleakness of our existence, but God says it is a promise to all. Some will be in the presence of God and others will be cast into Hell.

3:18 Evolution—atheism, Provine, www.answersingenesis.org/home/area/tools/Quotes/provine.asp

> "Let me summarize my views on what modern evolutionary biology tells us loud and clear . . . . There are no gods, no purposes, no goal-directed forces of any kind. There is no life after death. When I die, I am absolutely certain that I am going to be dead. That's the end for me. There is no ultimate foundation for ethics, no ultimate meaning to life, and no free will for humans, either." —Dr. William B. Provine, Professor of Biological Sciences, Cornell University

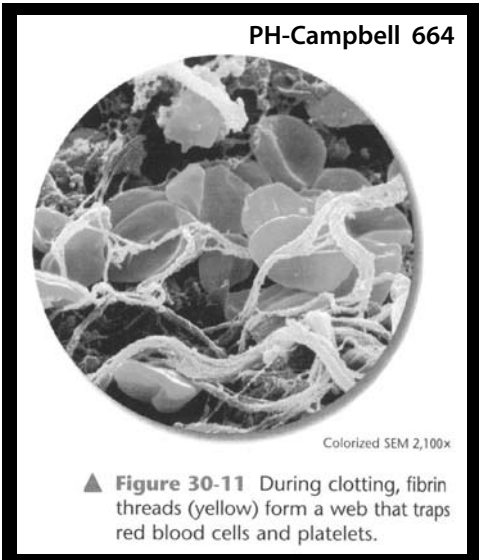
3:19 Natural selection, yes; evolution, no, Parker, www.answersingenesis.org/cec/docs/cfl-pdfs.asp

> The definition of the "fittest" individuals makes the notion of natural selection true based on circular reasoning. The fittest are the ones that survive, and you can tell which are the fittest by seeing which ones survive. (The fact that survival of the fittest is based on circular reasoning does not necessarily mean that the idea is false.) Fitness is controlled by many factors that allow the organism to survive and reproduce. The fastest zebra may be deaf and have a poor sense of smell. This combination would tend to eliminate his genes from a population. The only way to understand fitness is to study the first generation and then track the presence of those traits through time as successive generations are born.
>
> Numerical values can be used to represent the fitness of individuals based on the ratio of individuals with different traits. These numbers can explain fitness, but they have no predictive power—you can only determine the fittest after they survive. Mice that hold still to avoid being seen by a soaring hawk are better able to survive, except when it is safer to run to their burrows to avoid being eaten—each may provide an advantage. If the fact that the survivors survived is used to prove evolution, the circular reasoning becomes a logic problem.
>
> Another misconception is that the fittest variety must be increasing in number. Natural selection can still be

acting on a population as its numbers are declining. There is no direction implied in natural selection—you can be the highest scorer (most fit) on the losing team. Competition happens between species (interspecific competition), but natural selection acts within species (intraspecific competition). The struggle for survival is not between lions and zebras, it is within the zebra population. This intraspecific struggle allows for change within kinds, but not from one kind to another.

One shortcoming is that natural selection cannot plan ahead—an advantage one day may become a hindrance as the environment changes. This can ultimately lead to the extinction of a population despite its current success in the environment. Natural selection favors specialization into distinct niches; when the environment changes, the specialization becomes a disadvantage. It seems impossible that this process of undirected elimination could lead to an increase in variety and complexity.

Adaptations are usually presented in a way that makes them seem like a natural extension of natural selection. There is limited evidence to suggest that natural selection can lead to new adaptations, but ample evidence shows that adaptations can lead to natural selection. An adaptation must appear before natural selection can act on it. Evolution cannot explain the appearance of these traits, but the Creator provided the variety needed in the original created kinds.



The complex system of proteins involved in the blood-clotting reaction makes up an "irreducibly complex" system. If any one of the pieces is missing, the system fails. Evolution cannot adequately explain how such systems could arise.

The presence of irreducible complexity in biological systems is another

roadblock for naturalistic theories of evolution. It is hard to imagine how you could get to the top of the Empire State Building if you had to jump, but the task becomes easier when you learn that there are stairs. This slow and gradual idea is how evolutionists explain the molecules-to-man idea that once seemed impossible to imagine. This works if all of the steps can be used to build on one another, but what if this were not the case?

Darwin recognized this limit and acknowledged it in *Origin of Species*. In his book *Darwin's Black Box,* Michael Behe describes the biochemical details of several systems that need all of their parts present to function. Since removing one of the proteins involved in blood-clotting causes catastrophic results, the system has irreducible complexity. This irreducible complexity is not only present within living organisms but also between them in ecological interactions. The interaction of fish and shrimp in cleaning symbiosis is one example. A large fish allows a small fish or shrimp to clean parasites from its mouth and then swims off without eating the cleaner. How could this relationship, and other irreducibly complex systems, have evolved one step at a time?

Even if Darwin's ideas can explain the maintenance of traits and variation within a kind, they do not address the actual origin of the traits in the first place. Darwin used the phrase "from use and disuse, from the direct and indirect actions of the environment" to describe the origin of traits. This is exactly the view held by Lamarck, who is often contrasted with Darwin. Using a trait does not mean it will be passed to the offspring in a different form (stretching giraffe necks is often used as an example). As science has gathered more information about heredity, the idea of use and disuse has been shown to be false.

The origin of this new information is thought by neo-Darwinists to occur by random mutation—random mutations are the raw material for evolution. The cases of fruit fly mutation and flu virus are often used as examples to support evolution. However, these mutations cannot explain the increase or origin of information in living systems. The creationist model—that information was created by the

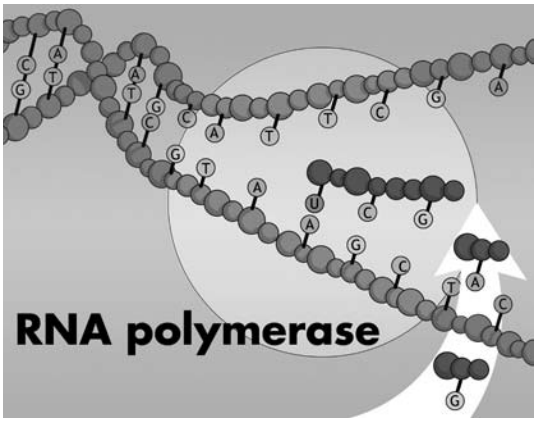
Supreme Designer—fits the observations much better than naturalistic evolution.

3:20 Learning the right tricks about life's origin, www.answersingenesis.org/creation/v13/i4/tricks.asp

A *Scientific American* article admits (way back in 1991) that the "chicken and egg" problem of DNA and proteins has not been solved by the RNA hypothesis. DNA requires proteins to function, and proteins are made from DNA. The actual laboratory observations are highly artificial with a "great deal of help from the scientists." Miller's and Fox's experiments on the origin of proteins and proteinoids, which supposedly produced "protocells," are essentially dead ends. Clever attempts at producing life in the lab only demonstrate that life can be produced by intelligence. The stories of life originating in clay crystals and deep-ocean vents are just stories, with no observational data to confirm them. In all, much more research is needed to even begin to answer the question of the origin of life in a materialistic framework. Creationists need only accept that God has created life and study the changes that have occurred since the creation.

3:21 Startling plant discovery presents problems for evolution, DeWitt, www.answersingenesis.org/docs2005/0406mutation_fixing.asp

An amazing discovery in genetics has shown that a certain plant (*Arabidopsis thaliana*) can actually fix a mutation in a recessive allele even when it doesn't have a copy of the correct sequence in its genome. In a well-designed study, the mutation was shown to be corrected in a "template-directed process," not by random mutations. Organisms that have a better DNA correction system would have a survival advantage, but the irreducible complexity of the system makes it highly improbable that it evolved. This correction mechanism has never been seen before and seems to defy evolution by natural selection. How do you select for the ability to fix a mutation that you don't have? This



In order for DNA to be transcribed, many proteins must interact with the DNA. The problem is that DNA is needed to make the proteins that are used to transcribe the DNA—a classic example of the "chicken and the egg" dilemma. Evolution cannot explain how such a system could have evolved by random processes acting over time. DNA was created fully functional.

trait could easily be lost from the population by genetic drift or random mutation in organisms that lack the mutation (assuming it is a DNA-encoded trait). A system that fixes random mutations would stop, or at least slow down, the evolutionary process.

The authors of the study suggest stress induces the repair. Stress has been shown to change mutation rates in certain bacteria, but in the other direction—more mutations are produced to create a variant that can survive the stress. RNA is a candidate for the correction mechanism, but many properties of RNA make it improbable. The RNA may be acting with other proteins, but more research needs to be done. Evolution is such a plastic theory that a "just so" story will probably come about as a result of this correction mechanism. The problem is that it would be just as likely to fix beneficial mutations as it would harmful ones. A creationist can accept this new mechanism as another way of maintaining the created kinds in light of genetic variability.

3:22 Is bacterial resistance to antibiotics an appropriate example of evolutionary change? Anderson, www.trueorigin.org/bacteria01.asp

[Summary quoted directly from the actual paper] Resistance to antibiotics and other antimicrobials is often claimed to be a clear demonstration of "evolution

in a Petri dish." However, analysis of the genetic events causing this resistance reveals that they are not consistent with the genetic events necessary for evolution (defined as common "descent with modification"). Rather, resistance resulting from horizontal gene transfer merely provides a mechanism for transferring pre-existing resistance genes. Horizontal transfer does not provide a mechanism for the origin of those genes. Spontaneous mutation does provide a potential genetic mechanism for the origin of these genes, but such an origin has never been demonstrated. Instead, all known examples of antibiotic resistance via mutation are inconsistent with the genetic requirements of evolution. These mutations result in the loss of pre-existing cellular systems/activities, such as porins and other transport systems, regulatory systems, enzyme activity, and protein binding. Antibiotic resistance may also impart some decrease of "relative fitness" (severe in a few cases), although for many mutants this is compensated by reversion. The real biological cost, though, is loss of pre-existing systems and activities. Such losses are never compensated, unless resistance is lost, and cannot validly be offered as examples of true evolutionary change.

3:23 Can genetic mutations produce positive changes in living creatures? Demick, www.christiananswers.net/q-eden/genetic-mutations.html

Richard Dawkins used the idea of a "blind watchmaker" to describe how genetics can create new features in organisms through evolutionary processes. Actual observations show that natural selection acts more like a "blind gunman" as mutations occur. Mutations occur when the genetic code of DNA changes and come in many different forms. Only the mutations in the germ cells (eggs and sperm) can be considered in inherited diseases. In a large protein, a mutation at many positions in a gene may cause a defective protein to be formed. In one cholesterol disorder, 350 disease-producing mutations

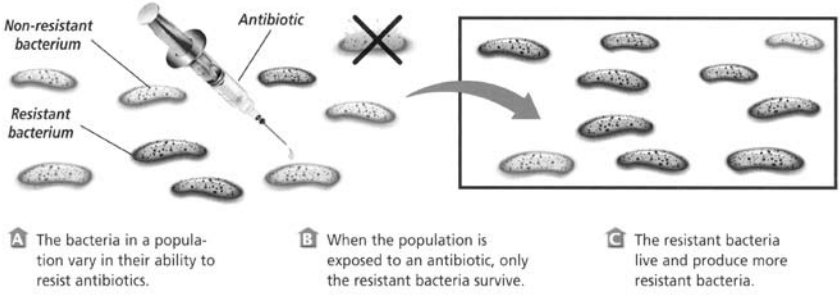


Figure 15.5
The development of bacterial resistance to antibiotics is direct evidence for evolution.
Infer *What problems can antibiotic-resistant bacteria cause?*

Glencoe 399

It is important to note that antibiotic resistance selects for traits that are already present in the population. Since there is no new information generated, it cannot be claimed that evolution is occurring.

have been documented to cause various problems with cell membrane receptors.

Cystic fibrosis (CF) is caused by a group of mutations in an ion pump in the cell membrane. The protein consists of 1,480 amino acids and the deletion of three bases at codon 508 causes most cases of CF. Nearly 200 other mutations have been shown to cause CF as well. Cancer is another disease that demonstrates the danger that mutations can cause to organisms. Many types of germ-line and somatic (body) cell mutations cause the cells to grow without the normal regulations on size and cell division.

If evolution has led from microbes to man, there should be some evidence that mutations can cause such an increase in information. Sickle-cell anemia is often used as an example to support Darwinian evolution, but the mutation clearly causes a loss of normal function with no new ability or information. Cancer cells are fitter than other cells around them but can hardly be considered as proof of evolution. The fact remains that observational science shows that mutations cause negative effects without a single example of a mutation that improves the function of a protein in support of evolution.

If we start from the Bible, the effects of mutations and

the continued decay of the human genome is a clear example of the Curse that resulted from Adam's sin. The human genome will become increasingly corrupted as time passes. Christ's return and the fact that He conquered death offers the world hope for the future.

3:24 What does the fossil record teach us about evolution? Van Bebber and Taylor, www.christiananswers.net/q-eden/edn-c006.html

When deciding if the fossil record actually supports the evolution of life on earth, many factors need to be considered. Animals and plants appear very abruptly in the fossil record. Evolution would predict the fossils we find should show a vast array of transitional forms—few if any are found. Despite the extensive number of fossils found, it is believed that few new fossil types will be discovered. The lack of order in the geologic layers presents another challenge for evolutionists. The fossil record is much more consistent with the occurrence of a global Flood and special creation than with an evolutionary history.

3:25 Evidence for a young world, Humphreys, www.icr.org/article/1842

Many of the dating techniques that can be used to determine the age of the universe and the earth point to a maximum amount of time less than the billions of years required by naturalistic evolution. Galaxies wind themselves up much too fast to be billions of years old. There are too few visible supernova remnants. Comets disintegrate too rapidly and have no mechanism to reform. There is too little sediment on the sea floor to account for erosion and not enough sodium in the sea to account for billions of years. The earth's magnetic field is decaying too rapidly. Rock layers are bent to extreme degrees, suggesting they folded rapidly while still soft. DNA and other biologic materials should decay and not be found in fossils—bacteria alleged to be 250 million years old should have no intact DNA left, yet they were able to grow.

Radioactive halos present in rocks show a time of rapid radioactive decay in the past. Too much helium resides in minerals that are supposed to be very old. Carbon-14 is found in diamonds and coal that are supposed to be millions or billions of years old. There are too few skeletons of Stone Age humans to support the alleged 200,000-year timespan. Agriculture and historical writings have been around for too short a period. In combination, this short list demonstrates that many dating methods defy the billions of years needed to support evolution's house of cards.

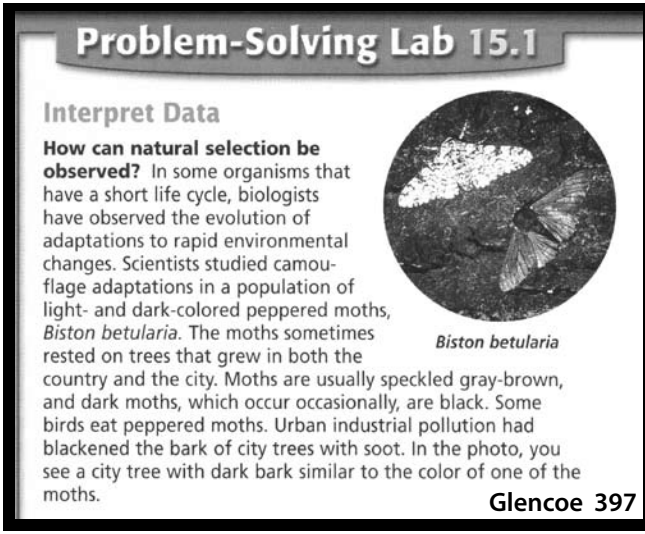
3:26 Gallup poll on creationism, poll.gallup.com/content/default.aspx?ci=18748

A poll conducted by the Gallup Organization in 2005 found that 29% of Americans believe that creationism (including life originating 6,000 years ago) is definitely true with respect to explaining the origin of life on earth. About 20% consider evolution definitely true, and only 8% believe intelligent design is definitely true. The results also indicate that many people still have mixed views on the compatibility of evolution and creation.

By 58% to 26%, a majority of Americans express their belief in creationism; by 55% to 34%, a majority also accept evolution. But 32% of Americans tend to reject intelligent design, while 31% say it is probably true. The statistics make it clear that many Americans are blending ideas of creation and evolution together in an attempt to make sense of the conflicting messages. (Standing on the authority of the Bible will lead to an acceptance of creationism as the only position consistent with Scripture.)

3:27 Natural selection, Parker, www.answersingenesis.org/cec/docs/cfl-pdfs.asp

Darwin based his idea of natural selection on the changes he observed in selective breeding by farmers and animal breeders. It can be observed that artificial selection can lead to the expression of hidden traits. Darwin suggested that if man can produce such changes in a short



Problem-Solving Lab 15.1

Interpret Data

How can natural selection be observed? In some organisms that have a short life cycle, biologists have observed the evolution of adaptations to rapid environmental changes. Scientists studied camouflage adaptations in a population of light- and dark-colored peppered moths, *Biston betularia*. The moths sometimes rested on trees that grew in both the country and the city. Moths are usually speckled gray-brown, and dark moths, which occur occasionally, are black. Some birds eat peppered moths. Urban industrial pollution had blackened the bark of city trees with soot. In the photo, you see a city tree with dark bark similar to the color of one of the moths.

Biston betularia

Glencoe 397

The peppered moths used as an example in many textbooks have actually been exposed as a fraud. Dead and sedated moths were placed on tree trunks where the moths were never observed to rest. Despite the fraud, this is a clear example of natural selection, not evolution.

time, over millions of years natural selection could produce entirely new species. Darwin was right about the ability of natural selection to change populations, but he was wrong about the extent of change that could occur.

A popular example in textbooks is the case of the peppered moth. The proportion of moths of different color was shown to change as pollution changed the environment they lived in. It has also been recently revealed that the photos of moths showed dead or stunned moths glued to trees and that the moths do not land on the trunks. Despite the fraud, the concept still fails to prove evolution in the molecules-to-man sense.

3:28 Mutation, yes; evolution, no, Parker, www.answersingenesis.org/cec/docs/cfl-pdfs.asp

There are three limits to accepting mutations as a mechanism for molecules-to-man evolution. First, there are mathematical limits to the probability of evolution occurring. Mutations occur once in every 10 million duplications of DNA, so it is very likely that every cell in your body contains at least one mutation since you were born. The problem for evolution is that you need multiple, related mutations to cause a change in a structure. If mutations occur at a rate of one in 10^7, the odds of getting

two related mutations is 10^{14}. The likelihood of evolution quickly becomes unreasonable. In bacteria that are resistant to four different antibiotics, the probability would be 1 in 10^{28}. It has been shown that the bacteria already had the information for resistance built into them—the trait was selected for, not created by mutations. Those bacteria that do become resistant by mutation are less fit and don't survive outside relatively sterile environments. This is not evidence for evolution.

Second, mutations are moving in the wrong direction to support the advancement of complexity required by evolution. Almost every mutation we know of has been identified based on the disease it causes. Mutations explain the decline seen in genetic systems since the Fall of mankind in Adam. The time, chance, and random mutations simply serve to tear things apart. Shortly after creation, there would have been few genetic mistakes present in the human population, and marrying a close relative would not have been a problem. Today, the likelihood of a shared mutation causing a disease is too great a risk to allow close marriages.

The advantage of avoiding severe malaria symptoms by those with sickle-cell anemia is often given as evidence of beneficial mutations. The overall effect of the mutation is not beneficial to the human race, however, and will not lead to a more fit population.

Third, mutations can only act on genes that already exist. Natural selection cannot explain the origin of genes because there was no information for natural selection to act on. Mutation and natural selection simply produce variation within a kind—just as the biblical creation model suggests. No genetic mechanism can increase the amount of information that is needed to demonstrate evolution from particles to people. Mutations do not add information to an organism's genome. Thousands of mutations would need to add information to change even "simple" cells into more complex cells. Even when genes mutate, they still pair up with similar alleles and are controlled by the same regulators. Mutations may affect the degree of a trait, but they do not cause new traits.

It is not the amount of time or the number of mutations, but the direction of change and the origin of information that are the biggest stumbling blocks for evolution. All of the evidence continues to point to the design and information originally provided by the Creator.

3:29 Scientific roadblocks to whale evolution, Sherwin, www.icr.org/article/433

One of the popular stories of evolution tells of how land animals evolved into whales and their cousins. Darwin suggested that a race of bears became more and more aquatic until they were whales. Other stories are full of details that have no basis in any facts. To produce whales from small land mammals would require countless changes. These gradual changes are not preserved in the fossil record to any degree.

There are many suggested ancestors to the whales, from wolf-like creatures to hippos. All require amazing changes that must have happened at an astonishing rate to fit the evolutionary timescale. Blubber, temperature regulation, special metabolism, countercurrent blood flow, and other functions would have to be present before natural selection could act on these traits. The development of one- or two-holed breathing structures stretches the limits of the evidence in fossils. Whale tails move up and down, while the alleged ancestors did not have this ability. The pelvis would have to be minimized while the flukes were expanded. The fossils to document these changes are absent.

The lack of consistency between molecular data and morphological data is a strike against evolution in general. The inconsistency is evident where certain proteins suggest whales and hippos should be grouped together, while the fossils suggest a carnivorous ancestor for whales. Neither natural selection nor mutations are sufficient to explain the alleged transformation from anything to a whale. The biblical model still provides the best explanation.

The actual fossils evidence is not presented as support for the drawings. When you see a picture like this, ask yourself, "What did the bones look like and where did the details come from?" The striped fur and the hump are drawn to give the impression of progress, but the fossils do not support the drawings. Keep in mind that the artist has an objective when they are drawing the pictures. This series seems to replace the once-popular horse series that was shown to be false.

Table 15.1
Fossils are used by scientists to understand how camels evolved.

Glencoe 400

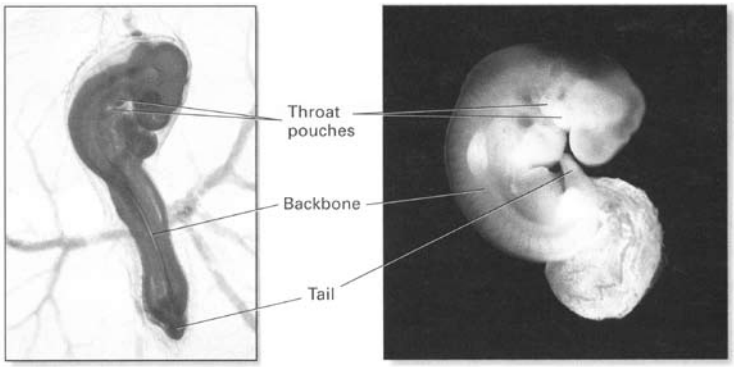
Table 15.1 Camel Evolution

Age	Paleocene 65 million years ago	Eocene 54 million years ago	Oligocene 33 million years ago	Miocene 23 million years ago	Present
Organism					
Skull and teeth					
Limb bones					

3:30 Camels—confirmation of creation, Weston, www.answers-ingenesis.org/creation/v19/i4/camels.asp

Many features of the camel point to amazing design. The features include the ability to go without food and water for extended periods, to avoid sweating by increasing body temperature, and to consume large amounts of water to rehydrate. The alleged evolutionary series of the camel is only possible because we have living examples today. If assembling fossils in a sequence is like a puzzle, you need to know what the picture looks like before you start, or you are just randomly placing the pieces. The *Camelops* fossils of 3.5 million years ago are described as true camels, but even they haven't changed much in the supposed expanse of time.

The presence of similar structures in human and bird embryos are supposed to be evidence for a common ancestor. However, a common designer using certain design features to accomplish different functions is also a legitimate explanation. Many embryologists have abandoned the idea of "embryonic recapitulation, " but it still remains in the textbooks as evidence for evolution.



▲ **Figure 14-15** Even at this early stage of development, the kinship of vertebrates is evident. Notice, for example, the throat pouches and tails of both the bird embryo (left) and the human embryo (right).

PH-Campbell 303

3:31 Fraud rediscovered, Grigg, www.answersingenesis.org/creation/v20/i2/fraud.asp

It is commonly asserted and taught that human embryos go through various evolutionary stages during the first few months of development. This idea has been presented for decades and used to justify abortion of the "fish" growing in the womb. This idea, called embryonic recapitulation, was developed by Haeckel in the 1860s. He produced fraudulent drawings to show the imaginary similarities between vertebrate embryos at a certain stage of development. Most informed evolutionists in the past 80 years have realized that the recapitulation hypothesis is false. Despite this, the idea that embryos look similar is still used as evidence for evolution. The "common knowledge" of similarities rests on Haeckel's fraudulent

drawings. A published study by Michael Richardson noted that no one had studied the similarities in detail. When the information was gathered in photographs, the stages shown by Haeckel are amazingly different from one another. The fraud of Haeckel has been exposed, but the idea is perpetuated in nearly every biology text produced. Is this continuation a fraud as well?

3:32 Hox hype, DeWitt, www.answersingenesis.org/docs2002/0215hox_hype.asp

Homeobox (hox) genes are the switches that control where and when a feature develops. Evolutionists use hox genes to describe how major evolutionary changes could have occurred—six-legged insects could have evolved from shrimp if the genes that control leg development were mutated. A reduction in the number of legs over time fits within the creationist framework of loss of information, but it does not explain the origin of the legs in the first place. Hox gene mutations that cause flies to grow extra wings are not accompanied by the muscular and other changes needed to make those wings functional—the extra wings would actually hinder the fly from flying, and the defect would be eliminated from the population. No matter how dramatic the changes may seem, losing or misplacing parts cannot explain the gain of information needed for molecules-to-man evolution.

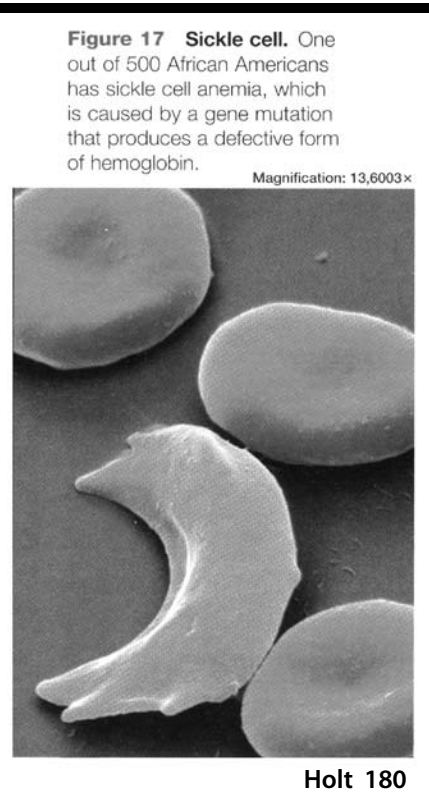
3:33 Living light, Sherwin, www.icr.org/article/231

Those who have seen fireflies are familiar with bioluminescence—a phenomenon found throughout the biological world. The chemical reaction that produces this "living light" is found in algae, worms, insects, fungi, and genetically modified organisms. Evolutionists attempt to explain the broad array of living things that have this ability with convergent evolution. This ability, which involves at least two chemical reactions and several compounds, would have had to evolve independently at least 30 different times to explain its existence in living things.

The separate lines of descent would have to have undergone the same random changes at hundreds of genetic steps—statistically impossible. The convergence of this and other traits is solid evidence for a Creator who used a common design.

3:34 Sickle-cell anemia does not prove evolution, www.answersingenesis.org/go/sickle-cell

It is commonly believed that the abnormally high presence of sickle-cell anemia (SCA) in African populations is evidence of evolution. It is true that individuals with SCA do not suffer as severely when they contract malaria because the blood cells are not as suitable for the malaria pathogen. This does not mean that there are not other factors (marriage customs, diet, viral infections, and social factors) that influence the occurrence of SCA in these populations. Using natural selection alone ignores the other social implications and leads to a misunderstanding of the true nature of the disease. Natural selection plays a part in the high frequency of those who carry the SCA gene, but it is not the only factor. Even though natural selection is shown to be a factor, it does not demonstrate the type of uphill evolution required to validate evolutionary theory.



The fact that sickle-cell anemia occurs at a higher rate in populations where malaria is common does not provide evidence for the type of changes required for molecules-to-man evolution.

3:35 Vertebrates: animals with backbones, Parker, www.answersingenesis.org/cec/docs/cfl-pdfs.asp

If animals have evolved from a common ancestor, there should be a multitude of missing links to demonstrate the gradual changes. One commonly cited example is *Archaeopteryx*. *Archaeopteryx* appears to have a blend of reptilian and bird characteristics—exactly what evolution would predict. The features of *Archaeopteryx* can be found in various birds, and the presence of wings and feathers doesn't tell you how—or if—they evolved from other structures. These complex features appear suddenly and fully formed in the fossil record. *Archaeopteryx* is a true bird with odd features, not a missing link.

The fraudulent "feathered dinosaur" (*Archaeoraptor*) that was published in *National Geographic* is another example of a missing link that has been abandoned. Many of the other Chinese fossils that are supposed to be the ancestors of birds actually occur too high in the rock layers. To be included as a transitional form, fossils must be in the right sequence and have intermediate features. Of the thousands upon thousands of transitional forms that must have existed, only a handful of fossils are possibilities.

Recognizing the failure of the fossil record to display the gradual nature of Darwinian evolution, Stephen J. Gould resurrected the idea of evolution in big jumps known as "punctuated equilibrium." Major remodeling of body plans could occur if regulator genes caused multiple changes at once. This would explain gaps in the fossil record, but it is not supported by observational science. Even if these creatures were born, what would they mate with? The exact mutations would have to occur simultaneously and in close proximity—a highly improbable situation. Those scientists who support this idea at least admit that the links are missing.

Gradualists say that punctuated equilibrium is absurd and evolution cannot happen that fast. Punctuational evolutionists point to genetic limits and fossil gaps and say that evolution didn't happen slowly. The creationist can simply agree that both are correct—life was designed by

the Creator. The variation that we see within created kinds supports this notion.

3:36 Catching a kinkajou, Catchpoole, www.answersingenesis.org/creation/v26/i3/kinkajou.asp

The fruit bat has teeth that are designed for eating fruit, not meat. Evolution would say that the bat evolved from a meat-eating ancestor, but that is based on assumption. Many other animals that are predominantly herbivores have a similar tooth structure.

Vertebrates are classified as carnivores based on their skull and tooth structure. The problem with this classification is that many "carnivores" are not—they have diets of strictly or mainly plants. The kinkajou (*Potus flavus*) is one such "carnivore." Scientists tried to catch them in traps baited with chicken, assuming that they ate meat because of their tooth structure. Bananas were finally used and were successful. Kinkajous, as it was later found, are exclusively vegetarian, even with a vicious-looking set of teeth. Many other animals (including fruit bats, grizzly bears, and pandas) have teeth that appear to be designed for eating meat but are actually used to eat mainly plants. So if we find a dinosaur, *Velociraptor* for instance, that has teeth that appear to be designed for eating flesh, it may be that they were used to rend the flesh of melons rather than the flesh of other dinosaurs. We know that all animals were originally to eat only plants (Gen. 1:29–30). The teeth that today, in our fallen world, are used to rip flesh may have once been used to strip leaves from branches or shred plants to be eaten.

3:37 Virus "evolution" benefits mankind? Purdom, www.answersingenesis.org/docs2006/0222virus.asp

Humans have developed the technology to manipulate the genetic code of many different organisms, but is it evidence for evolution? The ability to change a virus used to deliver gene therapy was recently described as "directed evolution." By selecting for viruses that could evade the

immune system and then copying those with intentional mistakes, scientists produced a virus that avoided immune defenses. Since the viruses already had the information to avoid the immune system, this cannot be considered evidence for molecules-to-man evolution—no new information was produced. The advantage provided by genetic mistakes in viruses in nature does not demonstrate that new information is added but that the preexisting information is selected for or against by the environmental conditions. This research did not rely in any way on evolutionary principles but the observed properties of genetic information that fits consistently in the creationist model of life.

3:38 Genetic variance of influenza type A avian virus and its evolutionary implications, Kitner, www.answersingenesis.org/go/bird-flu-evolving

The bird flu, caused by a type A influenza virus, has been in the media, and many are afraid that it will "evolve" into a form that will cause a pandemic in humans. The virus that causes disease is made up of eight RNA segments which code for its protein components. The bird flu spreads so rapidly because it is often present in migrating birds that show no symptoms. These birds pass the virus to domestic birds that do not have a natural immunity, which leads to outbreaks in the domestic populations. The ability of the virus to constantly change its protein coat makes vaccination virtually useless.The genetic variation within the virus is observable, but it does not support evolution in the molecules-to-man sense. The genes are simply slight variations that code for a protein that performs the same function. Viruses can change, but they cannot evolve to become anything other than viruses.

Questions to Consider

1. What mechanisms do scientists use to explain how mutations can produce new information to make organisms more complex, when virtually all mutations cause a loss of information or no change at all?

2. Since information cannot be created from matter by purely natural mechanisms and since it is not a part of the material universe, how did information originate? By what mechanism is new information added to genomes in evolutionary history? Can the information gain be demonstrated experimentally?

3. What direct fossil evidence is there that fish could have evolved into amphibians? Could the alleged transitional fossils be interpreted in multiple ways?

4. When two lines of evidence contradict each other (e.g., if DNA suggests one evolutionary relationship and anatomy suggests a different relationship), how do scientists decide which line of evidence is more compelling?

5. Why is evolution the key to understanding biology? Why is it necessary to know where the eye evolved from to understand how it works and how to treat it when it has a disease?

6. Why do examples of natural selection get equated with evolution when evolution is not observable and natural selection is?

7. Why do biology textbooks include the photo of the peppered moth when scientists have shown it to be a fraud?

8. Should we accept everything that the text tells us about evolution when the textbooks are constantly being changed and updated?

9. If evolution is not directed by a purpose, would it be safe to say that human existence is purposeless? What is the basis for truth and morality if human life is a byproduct of evolutionary processes (random interactions of lifeless chemicals)?

10. Are humans more special or important than any other organism if there is no such thing as higher and lower animals in an evolutionary framework?

11. Is it possible to know the original function of an organ that is called vestigial, like the appendix, when most tissues are not preserved in fossils and the ancestor cannot be examined? It would seem that there are many assumptions involved in making such a claim.

12. Does evolution predict stasis or progress? Why are so many "living fossils" found that have remained the same for hundreds of millions of years while other species have evolved relatively rapidly?

13. There seem to be many different definitions of evolution; do all scientists agree on what evolution is? Which view of evolution is correct (punctuated equilibrium, neo-Darwinism, Darwinism, etc.)?

14. Why do scientists consider homologous structures evidence of a common ancestor when they seem to fit the expected pattern, but scientists call them examples of convergent evolution when they don't fit the pattern?

15. What types of evidence would evolutionists accept as evidence against evolution?

Tools for Digging Deeper

(see a complete list in the Introduction)

The New Answers Book by Ham, et al.

The Biotic Message by Walter ReMine

Creation: Facts of Life by Gary Parker

Darwin on Trial by Phillip Johnson

Darwin's Black Box by Michael Behe

Darwin's Enigma by Luther Sutherland

Evolution: A Theory in Crisis by Michael Denton

Evolution: The Fossils Still Say No! by Duane Gish

If Animals Could Talk by Werner Gitt

In Six Days by John Ashton

In the Beginning Was Information by Werner Gitt

Genetic Entropy and the Mystery of the Genome by John Sanford

The Lie: Evolution by Ken Ham

Not by Chance by Lee Spetner

On the Seventh Day by John Ashton

War of the Worldviews by Ham, et al.