Disclosure

of things evolutionists don't want you to know

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How to Teach Evolution

Here's how we would teach evolution.

Occasionally people accuse us of not wanting evolution taught in schools. (They even falsely accuse us of not wanting "science" taught in public schools.) The truth is that we do want evolution taught in schools—but we want it taught properly. Perhaps we are at fault for not being clear enough about the proper way to teach evolution. So, here is an outline of what we think a proper course on evolution would include. Of course, we don't have space in our "six-page newsletter" (eight pages this month) to go into detail; but here are the main points.

The Scientific Method

It should go without saying that science is knowledge obtained through the scientific method. Unfortunately, it often does go without saying, so students never hear it. They get the false notion that "science" is anything a "scientist" believes (where "scientist" is defined to be "atheist"). Students should be taught about hypotheses, theories, and experiments to give them a proper science background before even talking about evolution. If they really understood the scientific method, they would know the difference between science and opinion.

Variation

Darwin correctly observed that there are variations among individuals of a particular species. Students should be shown this in some age-appropriate manner. In elementary school, this might be done by asking students to bring their pet dogs or cats in to class. The dogs could be weighed, and the height to their shoulders could be measured, length of hair could be measured, the color of their fur could be recorded, *et cetera*. In high school, it would be more appropriate to use current sports statistics to compare athletic ability. In college, we would use zoological data to establish the fact that individuals of a species vary.

There is an opportunity here for some cross-disciplinary education by introducing young children to the concept of "average." Older students could be shown the application of Gaussian distributions, means, standard deviations, and correlations. This would help to answer the perennial question, "Why do I need to learn math?"

The point is that, in some age-appropriate manner, the students need to recognize that variation among individuals exists.

In all the subsequent sections, the concepts should be taught in some age-appropriate way; but we usually won't illustrate the different ways the topic can be taught to different age groups.

Limits

Students should be taught that there are limits to variation. Human skin color varies from white to black through all shades of brown, but nobody has green or purple skin. There is a limit to how fast a race horse can run. [1] There is a limit to how much milk a cow can produce per day, *et cetera*.

Darwin mistakenly believed that there is no limit to the variation in species. He thought small variations could gradually accumulate over time to result in such a large difference that new biological categories would evolve.

Extrapolation

Students should be told that there are limits to extrapolation. Extrapolation is the process by which observations over a limited range can be extended to make predictions outside that range.

For example, if one knows the distance between New York and Chicago, and the how

[1] *Disclosure*, June 1999, "Kentucky Derby Limit", http://www.scienceagainstevolution.info/v3i9f.htm

long it takes a freight train to get from New York to Chicago, then one can predict roughly how long it will take a freight train to get from New York to Los Angeles (if one knows the distance from New York to Los Angeles).

But the conditions over the entire range must be constant. One cannot predict how long it will take a freight train to get from New York to Hawaii, even knowing the distance, because there aren't any train tracks across the Pacific Ocean.

Extrapolation only works as long as the underlying assumptions hold. Sooner or later, one always reaches a point where the assumptions break down.

For example, electronic devices keep getting smaller and smaller because technology evolves, allowing more and more electronic components per square inch. But, sooner or later, Moore's Law [2] will break down because the limit to the number of components per square inch will be reached.

This applies to evolution, too. One cannot extrapolate the small evolutionary changes commonly seen in microevolution to the big changes that would be necessary for macroevolution because (figuratively speaking) there aren't any train tracks.

Acquired or Inherited

After establishing that there are limits to variations, the students should be taught the difference between acquired and inherited characteristics. A body builder will acquire a different physique than a couch potato. But a baby born to a couple of body builders will not be born with bulging muscles. In certain cultures girls bound their feet to make them smaller, or put stretching collars around their necks to make them longer, because those cultures considered those characteristics to be beautiful. But these painfully acquired characteristics were not inherited by their daughters.

Some characteristics, however, are inherited. The tallest children in class probably have the tallest parents. The children with the darkest skin probably have parents with darker skin.

In Darwin's day, scientists had not yet learned the difference between acquired and inherited characteristics. Darwin thought that diet, exercise, and climate (which do produce acquired characteristics) would produce changes that would be inherited by future generations. He was wrong about that.

Scientists are just beginning to learn how prenatal influences can affect gene expression. In some cases, environmental conditions determine the sex of an individual. [3] This is one area where the course needs to be constantly updated to include the latest information.

Mutations

Darwinian evolution has been replaced in evolutionary circles by "neo-Darwinian Evolution." The difference is that neo-Darwinian evolution credits random genetic mutations for inheritable traits, rather than Darwin's incorrect notion about diet, exercise, and climate.

Random genetic mutations certainly do manifest differences in the individuals suffering them. In the vast majority of cases, the mutations result in characteristics that are either harmful to the individual afflicted with them, or have no effect. Only in rare instances is the mutation beneficial.

There are two problems for neo-Darwinian evolutionists. First, if every characteristic of every living thing, from an albatross to a zebra, is the result of a random mutation, there would have to have been an unreasonably large number of successful mutations.

Second, there is a difference between a beneficial mutation and a creative mutation.

A mutation to an existing characteristic might be beneficial in a particular environment. The classic example is sickle-cell anemia, which provides some protection against malaria. But, in countries where malaria is not a problem, sickle-cell anemia is not a disease one would want to have. So, sickle-cell anemia is beneficial only in certain environments. Sickle-cell anemia is one of a small number of mutations that modify an existing characteristic in a beneficial way in a particular circumstance.

There has never been a case where an entirely new characteristic has originated by a random mutation. That is, no novel biological functions have ever appeared by chance.

For example, it is unscientific to think that mammary glands (and all the chemical processes that occur at childbirth to make them functional at just the right time) happened by chance when an unknown reptile evolved into the first mammal. The notion that mammary glands are just modified sweat glands is ridiculous. [4] For one thing, reptiles are cold-blooded animals that don't have sweat glands that could be modified. If mammals did

[2] http://en.wikipedia.org/wiki/Moore%27s_law

[3] *Disclosure*, February 2003, "Birds and Bees", http://www.scienceagainstevolution.info/v7i5f.htm

[4] *Disclosure*, January 2002, "Sweating Milk", http://www.scienceagainstevolution.org/v6i4e.htm

evolve from reptiles, then one would expect to find some warm-blooded reptiles that do have sweat glands to help regulate their temperature. Second, sweat glands respond to temperature, not childbirth. If anyone tries to tell you that mammary glands are modified sweat glands, don't buy milk at the same dairy he does!

Survival

Darwin correctly observed that more species are born than live long enough to reproduce. (Of course, this is as obvious as when the TV newsman reporting on a disaster says, "The death toll is expected to rise!" Does anyone really think that some of the people who drowned in a flood will come back to life, lowering the death toll?) Of course, the number of individuals surviving to maturity can't exceed the number born, and some individuals die before they reproduce. Darwin could not possibly have been the first to notice this; but he gets credit for it.

Darwin went on to speculate that individual differences might influence which individuals survive long enough to reproduce, and which don't. This notion is called, "survival of the fittest." Biologists certainly agree that individual differences COULD affect survival rates. The disagreement among modern biologists is to what extent the advantage might be. It isn't necessarily the slowest gazelle that wanders too close to the hidden lion. "Survival of the fittest" might be insignificant compared to "survival of the luckiest".

Selection

This leads to the concepts of natural selection and artificial selection. Natural selection is the notion that survival of the fittest affects the breeding population in such a way that certain characteristics become predominant.

Artificial selection is like natural selection on steroids. The breeder allows only the strongest sled dogs to breed. There is no luck involved. The breeder has a goal in mind and controls which dogs are allowed to breed based upon reaching that goal.

In natural selection, there is an improved probability that the fittest will survive; but it is not as iron clad as the ruthless survival determined by a breeder. Furthermore, natural selection has no goal in mind, so a round-about path to the goal will not be taken. The variation has to have an immediate, significant survival advantage in natural selection. Artificial selection allows small, indirect steps toward the goal, and luck has no part in the process. That's what makes artificial selection more efficient than natural selection.

It is well established that artificial selection can produce significant variations. This is evident from the various breeds of dogs and horses that have been bred for specific purposes. It is equally well established that there are limits to how much change can be achieved through breeding. Despite all the breeding experiments using bacteria, fruit flies, pigeons, dogs, horses, roses, and various crops, the bacteria have never evolved into anything other than bacteria, the fruit flies have never evolved into anything other than fruit flies, *et cetera*. No amount of breeding can cause a fruit fly to evolve into a bumble bee, or any other kind of insect, known or unknown.

The fundamental reason for this is that breeding eliminates undesirable genes. To breed a fast horse, one has to prevent all the slow horses from passing their genes on to future generations. Eventually, only fast horses are left in the breeding pool. Breeding achieves its goal by removing undesirable information from the DNA molecule.

Information From Nothing

To breed a flying horse, like the mythical Pegasus, one would have to add information to the DNA that causes the horse to sprout wings. Breeding doesn't create genetic information. But, if Pegasus had existed, it would have been possible for a genetic mutation to prevent the wings from forming, so an ordinary horse could have devolved from Pegasus. Genetic information can be lost by accident; but it cannot be created by accident.

Modern genetics has advanced to the point where "gene jockeys" can remove genes from the DNA of one species and artificially insert it into another species. Such things as genetically modified food, and genetically engineered glowing fish, raise some important ethical questions and potential public safety issues that public schools might want explore, in a fair and honest way. Regardless of the ethical implications, it should be noted that the only way to add genetic information to a DNA molecule is to take existing genetic information from another DNA molecule and insert it into the target molecule.

This naturally leads to the question, "Where did the genetic information in the other DNA molecule come from?" If it came from another DNA molecule, where did that molecule get it? The information either came by accident or on purpose. This naturally leads to a cross-disciplinary discussion of computer science, which would show the student that information is not created by accident.

Populations

In one sense, populations do evolve. That is

to say, demographics can change. Introduction of a predator can change the relative numbers of individuals in each species (and subspecies) in the environmental area under consideration. The famous peppered moth observations [5] should be thoroughly discussed, with an emphasis upon the fact that both colors were present at the beginning and end of each period, so there was no evolution from one color to another. All that changed was the proportion of each color.

Chicken or Egg

The classic paradox is, "Which came first—the chicken or the egg?" Scientific observation has firmly established that chickens come from eggs laid by chickens. There has never been a documented case of a chicken coming from anything other than a chicken egg, nor has a chicken egg ever been laid by any bird other than a chicken. So, we have a circular dependency with no beginning. Since there is no observable, natural process by which the cycle can begin, it leads to the conclusion that the cycle either began with a supernatural process, or a natural process that is not observable.

If one makes the assumption that there are no supernatural processes, then one must conclude that chickens (and every other species, for that matter) originated through a natural process that is not observable.

The Hopeful Monster assumption is that the process hasn't been observed because it happens too quickly. A lizard lays an egg and a bird hatches from it, with no intermediate forms. The Hopeful Monster hypothesis is not accepted by most evolutionists, and should not be given too much consideration (but it should be mentioned).

The Darwinian assumption, on the other hand, is that the natural process is not observable because it is too gradual. That is, the first chicken is the mutant offspring of a previously existing bird that was hardly any different from a chicken.

There are problems with the Darwinian assumption, however. If all the intermediate forms survived, then there would be no clear distinctions between species. It would be very difficult to categorize living things into species. If the intermediate forms went extinct, then there should be countless fossilized transitional forms.

In geology, rocks can be any size. The Krumbein Phi Scale [6] arbitrarily defines "boulders" to have a diameter of more that 256 millimeters, "cobbles" to be 64 to 256 mm in diameter, "gravel" to be 2 to 64 mm in diameter, and "sand" to be less than 2 mm, *et cetera*. These arbitrary distinctions are necessary because the size of rocks don't have any natural divisions.

Darwinian evolution would result in such gradual distinctions that biologists would have to make similar arbitrary decisions about living things in order to classify them. In fact, the differences between species would be so small that practically every individual could be considered a different species.

But animals either have backbones or they don't. The either have feathers, or they don't. They have mammary glands, or they don't. The presence or absence of diagnostic characteristics makes plants and animals classifiable. Living things don't occupy a continuous spectrum of diversity—they naturally fall into distinct groups.

Taxonomy

Biological classification (taxonomy) is largely based on decisions historically made by Carl Linnaeus in the 18th century regarding which shared physical characteristics make the most sense when classifying species. He also devised a hierarchy of similarity going from species to kingdom. Students should become familiar with this hierarchy and be given tests to see if they can correctly place living things in the proper genus, family, order, or phylum.

Students should be taught that the classification criteria are arbitrary. One could argue that whales should be classified as fish (as they once were) rather than mammals (as they are now) because (in someone's opinion) the fact that whales live in the water is more important than the fact that they nurse live young. The modern classification system has been revised from time to time as opinions change.

DNA comparisons sometimes make the decisions simpler—but sometime yield surprising groupings. [7] This has led to controversy in the biological community as to how some species should be classified.

The belief that species arose from the unobservable gradual natural process of descent with modification has become the driving assumption in modern biological classification. That is, living things assumed to have the closest common ancestor are classified together. But, since the classification system is now based on

[5] *Disclosure*, February 2002, "Horses and Peppered Moths", http://www.scienceagainstevolution.info/v6i5f.htm

[6] http://en.wikipedia.org/wiki/Krumbein_scale

[7] *Disclosure*, July 1999, "The DNA Dilemma", http://scienceagainstevolution.info/v3i10f.htm; *Disclosure*, November 2001, "Fuzz, Birds, and DNA", http://scienceagainstevolution.info/v6i2n.htm

an assumed evolutionary history, it cannot logically be used as proof of evolutionary history. (It is logically invalid because it is circular reasoning. Lions and Tigers have been assigned to the genus *Panthera* because they are assumed to have evolved from a common ancestor. Therefore, the fact that they are in the same genus is not proof that they evolved from a common ancestor.)

Fossils

Fossils are evidence of forms of life that died some time in the past. Some of these living things still exist, and some are extinct. Fossils of existing species are easy to identify because the fossils can be compared to bones known to exist in that species. But when an isolated bone or tooth unlike any other known bone is discovered, scientists sometimes try to reconstruct the entire creature based on that one bone or tooth. Sometimes, the reconstruction is not nearly correct. Nebraska Man [8] is an excellent example. *Eosimias* [9] is another. This is an excellent opportunity to warn students not to draw vast conclusions based on half-vast data.

The course should include an honest presentation of how fossils are dated, and the assumptions used by those dating methods.

It should also be pointed out that even if a fossil really is older than another fossil of a different species, it is not proof that the younger fossil was an actual descendant of the older one, even if there are some physical similarities. The classic example of a bogus construction of an ancestral lineage is the now-discredited horse evolution. [10]

Origin of Life

The theory of evolution attempts to explain the diversity of life on Earth. The evolutionary explanation is, "descent with modification from an original life form." For the evolutionary explanation to be complete, one must include the origin and characteristics of that first life form.

The first living thing had to be able to reproduce in some manner before it died. It needed some form of metabolism in order to grow and reproduce.

The countless failed experiments attempting to show how the first living cell could have formed provide a wealth of information about how complex even the most "primitive" cell must have been. (Of course, the term "primitive" is a pejorative term based on the assumption of evolution.) Students should be told all the obstacles preventing the accidental origin of life.

System Engineering

Analysis of the complexity of the simplest living thing naturally leads to a discussion of biological systems. Living things consist of a number of components which operate in concert to form a functional system. That is, a heart and two lungs are of no value without blood. Lungs and blood are of no value without a heart. An incomplete system cannot function.

The primary emphasis of a biology course should be the study of how biological systems operate. This is the foundation of modern medicine. Furthermore, since biological systems must interact with the environment, this leads to a better understanding of ecology.

Conclusions

The practical applications of biology to medicine, ecology, and agriculture are much more important than foolish speculation about how reptiles turned into mammals. This would be true even if reptiles really did evolve into mammals. But, since reptiles did not evolve into mammals, there is no value in speculating about how it happened at all.

Evolution in the News

Another Man's Junk

Who would have thought DNA isn't mostly junk? We did!

We just had to laugh when we read this startling "news!"

> This week, 30 research papers, including six in *Nature* and additional papers published by *Science*, sound the death knell for the idea that our DNA is mostly littered with useless bases. A decadelong project, the Encyclopedia of DNA Elements (ENCODE), has found that 80% of the human genome serves some purpose, biochemically speaking. "I don't think anyone would have anticipated even close to the amount of sequence that ENCODE has uncovered that looks like it has functional importance," says John A. Stamatoyannopoulos, an ENCODE researcher

[8] *Disclosure*, April 2004, "Nebraska Man Sues for Re-instatement", http://scienceagainstevolution.info/v8i7n.htm
[9] *Disclosure*, September 2000, "Eosimias", http://scienceagainstevolution.info/v4i12n.htm
[10] *Disclosure*, February 2002, "Horses and Peppered Moths", http://www.scienceagainstevolution.info/v6i5f.htm

at the University of Washington, Seattle. [11]

Really? He doesn't think anyone would have anticipated it? We anticipated it! We've said so in previous newsletters.

> a lot of that **junk DNA really does have a purpose.** [12]

> The DNA molecule contains large sections of "junk DNA." These are sections of the DNA molecule which apparently have no function. The arrogant assumption is that since scientists can't figure out what the function is, it must be junk without any function. It is unthinkable to entertain the notion that **junk DNA might actually have a purpose**, but we are too stupid to figure it out. [13]

We've also said in previous newsletters that the theory of evolution hinders the advancement of science. This is a good example. The theory of evolution says that the DNA molecule evolved by chance. Therefore, one would expect a lot of it to be random junk, and would not expect to find any value in it.

> Although catchy, the term "junk DNA" for many years repelled mainstream researchers from studying noncoding DNA. Who, except a small number of genomic clochards, would like to dig through genomic garbage? However, in science as in normal life, there are some clochards who, at the risk of being ridiculed, explore unpopular territories. Because of them, the view of junk DNA, especially repetitive elements, began to change in the early 1990s. Now, more and more biologists regard repetitive elements as a genomic treasure. [14]

Creationists, however, are not "mainstream researchers." They believe that the DNA molecule was intentionally designed, and expect to find reasons for every part of the DNA molecule. So they see hidden treasures rather than junk, and look for meaning in every part of the DNA molecule.

The Origin of Junk

If you go to the junkyard, you will find junk. None of that junk was created to be junk. It was created for a purpose, but became junk later. Every old clunker on the road came out of the factory as a shiny new automobile.

Some small fraction of the DNA probably is now junk because of copying errors. People old enough to remember the first photocopy machines remember that one could easily tell the copy from the original. The copy was imperfect. If one made a copy of a copy of a copy of a copy, the result was barely readable.

Every time a computer file is copied, there is an opportunity for a mistake. If that file is the executable source for a computer program, that mistake might prevent the program from operating properly.

With every generation, a new DNA molecule is created by copying parts of both parents' DNA and combining them. There is an opportunity for error every generation. So, it is possible that some portion of the DNA might be miscopied, and no longer functional. If the error is sufficiently harmful, natural selection will eliminate the individual who has that harmful error. But, some errors aren't fatal, so some genes might no longer function properly. That part of the DNA becomes junk.

If one takes the attitude that the entire DNA molecule had some function, but part of it no longer does, one would strive to figure out how it is broken and try to fix it. But, if one takes the attitude that junk DNA never had any purpose, one won't try to fix it. That's why creationist scientists go where mainstream evolutionists don't think to go.

Many genetic diseases could be the result of accumulation of junk DNA over many generations. So, what little junk DNA there is should be given special attention to determine what function it previously served, and determine what changes have to be made to restore that function. An evolutionary scientist would never do that because the evolutionist doesn't believe there was any function to begin with.

Email

Improbability

It is foolish to compute the probability of something that can't possibly happen.

Andrew sent us this email which references an old article from a site which requires you to get a

[11] Elizabeth Pennisi, *Science*, 7 September 2012, "ENCODE Project Writes Eulogy for Junk DNA", http://www.sciencemag.org/content/337/6099/1159.full?sid=acbcfdbc-6b82-4f44-ac95-14d4602dd742

[12] *Disclosure*, February 2008, "We Often Agree**",** http://www.scienceagainstevolution.info/v12i5e.htm

[13] *Disclosure*, February 2010, "Why, Oh Y?", http://www.scienceagainstevolution.info/v14i5n.htm

[14] Wojciech Makalowski, *Science*, 23 May 2003, pp. 1246-1247, "Not Junk After All", http://www.sciencemag.org/content/300/5623/1246.full?sid=128c7c7f-97e2-48a6-893f-0e354747b5b8

free account in order to read the articles on it. The article talks about how many nucleotides there are in a DNA molecule, how many mutations would have to occur to make a meaningful change in the gene expression, and a presumed mutation rate. It comes to the conclusion that evolution is too improbable to occur. But, comments posted by evolutionists argue that natural selection makes the process non-random and make personal attacks against the writer of the article. The italic portions in Andrew's email are his partial quotes of the evolutionists' comments.

Hello my name is Andrew and I am close to finishing my AS in science. It was not until recently that I honestly decided to look into the question of "Does evolution work?" I always told myself such a thing was nonsense, but never knew how to silence it or challenge it. I am astonished by all the information that destroys macro-evolutionist and naturalistic origin theory that I never knew about. I notice among the many logical arguments against evolutionary theory is statistics and probability. I find the probabilities to be undeniable in giving a death blow to evolutionary theory, however I find die hard evolutionists that counter probability as if it means nothing. I don't understand how they can do this rationally. Challenging the popular belief is a hard task as I am finding out even in the light of how irrational their beliefs are.

For instance, an old article from 2002 at http://www.thetrumpet.com/article/595.0.41.0/science/evolution/the-improbability-of-evolution speaks on the improbability of evolution, but as expected the defenders of evolution strike. Being that I am not really knowledgeable in these areas and young in my secondary education, how does one dissemble the response under the name Justin to that article? I have thoroughly enjoyed the highlighting of fallacious phrases in your websites issue releases and wonder how that method would be applied to this article.

Things that jump out at me are *"Your article on "the improbability of evolution" completely ignores the natural selection, which (to put it very mildly) drastically constrains the multitude of possible events from which a favorable one can occur."*

And the ad hominem *"Your command of the vocabulary of modern biology leads me to believe that you probably have a sufficient understanding of the topic to know about these facts, which means you have consciously ignored them in your article."*

And then the follow up comment by "Observant Human" who says *"Ergo there is no need to consider the probability of proteins being made of only levo amino acids but rather focus on the simple fact that it really came down to a fifty-fifty chance during an event that happened millions of years ago."*

Andrew

In the sixteen years we have written this newsletter, we have never tried to make the argument that evolution is too improbable to have been responsible for the origin and diversity of life because it isn't improbable—it is impossible. Macroevolution isn't some possible, but extremely unlikely explanation for how things came to be. Macroevolution doesn't defy probability—it defies scientific laws.

The usual creationist argument against evolution on the basis of probability is invalid for two reasons.

First, to compute the probability of one particular occurrence, one must enumerate all the possible outcomes, and enumerate all the "successful" outcomes (where success is defined as a coin toss resulting in heads, or five cards forming a royal flush, or some such thing), and then determine the percentage of successful outcomes. There are well-known (to mathematicians) rules for combining the probability of individual events into an outcome that depends upon multiple events.

When speculating about the total number of mutations possible, and the number of mutations that might produce the desired result, one steps outside the realm of legitimate probability. The calculated probability value depends entirely upon the assumptions that one makes about the number of successful and unsuccessful outcomes. Furthermore, it depends upon the assumption that there really is at least one successful outcome.

For example, suppose one wanted to compute the probability that when a pair of standard gaming dice is rolled, the total on the two top faces will be 2. The only successful outcome is when the first die comes up 1, and the second die comes up 1. There are a total of 36 different outcomes. You can count them. (1 and 1, 1 and 2, 1 and 3, and so on up to 6 and 3, 6 and 4, 6 and 5, 6 and 6). So, the probability of rolling "snake eyes" is 1 out of 36. But what is the probability of rolling 13? Since the highest value is 12 (6 + 6), there are no possible outcomes, so it isn't possible to roll 13. It isn't simply unlikely that you will roll 13—it is impossible.

The second fallacy is that probability only works for future events. It doesn't work for past events. If one tried to compute the probability that a boy born on my birthday in my birthplace would marry a girl born on my wife's birthday in my wife's birth town on the exact day and time that my wife and I got married, the probability would be impossibly low. But the fact is that I was born on my birthday, and my wife was born on her birthday, and we got married on our anniversary, no matter how improbable that was.

So, all the speculative calculations about how many random changes to DNA would be required to cause one kind of living thing to turn into a different kind of living thing are irrelevant because it just can't happen, and if it could happen, the probability would seem to be small anyway.

by Lothar Janetzko

Creation-Evolution Controversy

http://en.wikipedia.org/wiki/Evolution_vs_creation

The creation-evolution controversy has evolved on Wikipedia.

This month's web site review looks at how the creation-evolution controversy is described on Wikipedia, the free encyclopedia of the World Wide Web.

Wikipedia is "written collaboratively by largely anonymous Internet volunteers who write without pay. Anyone with Internet access can write and make changes to Wikipedia articles, except in limited cases where editing is restricted to prevent disruption or vandalism. Users can contribute anonymously, under a pseudonym, or, if they choose to, with their real identity." If you are interested in learning about the changes made to an article on Wikipedia you can track recent changes from a link on the main page of the article.

At the top of articles on Wikipedia you will find links to Article, Talk, Read, Edit, View History and Search. From these links you can discover how the article has changed over time. A characteristic of articles on Wikipedia is that you will find numerous links to other related topics and articles also found on Wikipedia. You will find many cross references to other articles on Wikipedia.

The article on the creation-evolution controversy begins with the following definition: "a recurring cultural, political, and theological dispute about the origins of the Earth, humanity, life, and the universe." This definition is then followed by a brief description which you might view as the executive summary of the article. It tries to briefly discuss the two sides of the creation-evolution controversy.

Following the introduction or summary of the article you will find the Table of Contents for all of the material that has been chosen to be included in the article. For this particular article, Contents include 1) History, 2) Legal Challenges and their consequences, 3) Viewpoints, 4) Arguments relating to the definition and limits of science, 5) Disputes relating to science, 6) Public policy issues, 7) Issues relating to religion, 8) Forums, 9) Outside the United States, 10) See also, 11) Footnotes, 12) References, 13) Further reading and 14) External links.

As you can tell from the Table of Contents, there is a lot of information to explore in this article so just follow links you find interesting. Also remember that people writing about creation and evolution often present their views based on their personal biases.