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The Firefly

What makes them glow?

How does evolution explain it?

Evolution assumes that there were a large number of accidental firefly mutations and that some of these mutations brought the firefly closer to its glow. As these mutations were happening the fireflies were also exposed to environmental pressures. These environmental pressures (like food, mates or weather) caused the fireflies that were further from their glow to die out while the others survived. Ultimately, a genuine glowing firefly was born.

Certainly, Darwinists have various twists to their theories, but the sum of it is always that accidental mutations acted upon by natural selection created fireflies.

How does intelligent design explain it?

Intelligent design says that the mechanism that causes the firefly to glow is simply too complex to be explained by a series of accidents and environmental pressures. Intelligent design says that the firefly was planned. It was designed by a Designer and that designer was the Creator, who designed and created all things.

What does evolution say about the Creator who created fireflies?

Evolution assumes that there is no Creator and, based upon this assumption, concludes that there is no Creator. Since there is no Creator, all of life must have evolved. Evolution refuses to even consider the possibility of a Creator because Evolution is governed by its theistic conclusion that the Creator does not exist. Evolution has no real explanation for the firefly or, for example, the human brain because they are far too complex to have occurred by a series of accidental mutations and environmental pressures.

But, what will you believe? But before you decide, let's look at how the firefly glows.

The chemistry and explanation of how the firefly glows is set forth in this website and others:

<http://learn.genetics.utah.edu/content/begin/dna/firefly/>

which is published by the University of Utah in the United States. The publication from the University of Utah states that:

1. In order to create light, the firefly must first produce an enzyme called *luciferase*. Wikipedia shows a picture of this complex molecule at http://en.wikipedia.org/wiki/File:PDB_1nfp_EBI.jpg
2. Luciferase is composed of 38 different enzymes. See <http://www.sciencedirect.com/science/article/pii/S0969212696000330>
3. Each enzyme is, of course, composed of its own chemical components. But assuming that all of the enzymes had properly evolved and were all assembled in one place and assuming that there were no other chemicals around, what are the chances that those 38 enzymes would come together in the correct order, all organized as set forth in the Wikipedia drawing? That is, what are the chances that all 38 enzymes came together by chance mutations? The mathematical formula to determine how many different arrangements there are for 38 different pieces is well known.

That formula is $1 \times 2 \times 3 \times 4 \times 5 \dots \times 38$. You may find examples of how this works on [Calculating the Chances of a Random Arrangement](#). The number of different arrangements of 38 different pieces is astronomical and that number alone renders it impossible for luciferase to have occurred by a series of accidental mutations and environmental pressures. The number is larger than most calculators can calculate, but suffice it to say that 20 different pieces have 2,432,902,008,176,640,000 different combinations. This is hard to believe until one tries it.

4. Once the formula for luciferase has been determined, it must be written down so the firefly can produce luciferase. But before the formula can be written down, there must be a language to express it. That language must not only express it and express it accurately, but there must also be something that can read it. And that something must acquire the language somewhere. And, of course, the problem for the evolutionist is that the cell's translating machinery consists of at least fifty macromolecular components which are themselves coded in DNA. The code cannot be translated except through products of its own translation. It had to have been designed by a third party, the Creator.
5. That code, like the language that you are reading now, is non-physical logic. Non-physical logic cannot evolve. And this code (or language) is very complicated. It describes a molecule of luciferase, as well as all of the other chemistry of the firefly in the same way that human DNA describes all of the chemistry of the human. This language was devised and then inscribed on the chemical structure of a molecule.
6. The formula for luciferase is correctly written in the proper language into a portion of the DNA molecule in the firefly. This is common knowledge.
7. But once the formula has been written in

the proper language into the molecule, the accidental mutations and environmental pressures had to create something to read it and something to manufacture the molecule itself.

8. According to the University of Utah, there is an enzyme called RNA Polymerase and this molecule somehow finds the right portion of the DNA that describes luciferase and copies it. This process is called "transcription." The same word is used to describe the process of a court reporter taking down what had been said in a meeting or in court.
9. The Polymerase molecule that copies the luciferase is just as complicated as the luciferase. For a diagram of one type of RNA Polymerase see http://en.wikipedia.org/wiki/File:Alpha-Amanitin%E2%80%93RNA_polymerase_II_complex_1K83.png
10. After the Polymerase copies the formula for luciferase, it then separates and moves to the cytoplasm (the outer portion) of the cell. How it does this is not known.
11. When it arrives, it is recognized by a Ribosome, which is a portion of a cell that holds the key to the transcription. The RNA is then somehow fed through the ribosome (the ribosome "knows" the language) and the ribosome reads the transcription and finds the appropriate atoms to construct the molecule. It then takes these atoms and places them together in the right order to create a molecule of luciferase.
12. And, of course in order for their light to be effective, the firefly must have a place for it to light and reflectors behind it to reflect that light that would otherwise be absorbed by the body. The firefly separates uric acid from its circulatory system and creates crystals of uric acid and places them at the back of its lighting cells (So, somebody knew that uric acid crystals reflect light and should be placed at the back of the lighting cells).

13. In order to actually make the light the firefly needs cells that make light. These cells had to be placed into the lighting chamber. They contain luciferin and these are the cells that also make luciferase.
14. In order to make light the Designer enabled the firefly to remove oxygen from the air by means of a tiny tube in the firefly's abdomen called the abdominal trachea and place molecules of oxygen with the luciferin that is in the cells. This combination creates a compound called oxyluciferin. See <http://science.howstuffworks.com/environmental/life/zoology/insects-arachnids/question554.htm>. However, the chemical reaction of luciferin and oxygen is too slow to produce significant quantities of light. It must be speeded up. The enzyme luciferase (described above) sufficiently speeds up the reaction so that it produces light.
15. Evolution argues that the firefly's light evolved in order to enable the firefly to call a mate. Evolution says that since evolution cannot even posit the existence of a Creator, the firefly must have been created by chance mutations and environmental pressures. It may well be true that the firefly's light aids its survival, but the problem with this simplistic explanation is that it does not even begin to explain how a process of this complexity be created by natural selection when all of it has to be in place before the firefly can flash its first flash. Unless one simply presumes that a Creator does not exist (as evolution does), it is far more logical to conclude that the firefly's flash is not something that just happened. It was planned.

Written by Charles R. Chesnutt, Sr.
Mr. Chesnutt's professional website is Chapter7-11.com
See also Biblebooks.co

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