

## Infrared Vision in Snakes



When some snakes hunt, they see heat. Heat is an invisible part of the spectrum of light. The snake sees heat by means of two heat sensing organs that are in small cavities or pits on either side of the snake's head (hence "pit viper").

Each of the pits is enclosed and has a small opening that serves to project a very blurred image on the heat sensors. The heat pattern that the snake can see is extremely sensitive.

A snake can perceive heat differences as small as .003 degrees Centigrade.<sup>1</sup> The snake's receptors are microscopic and "Snake infra-red images are 10 times more sensitive than the best artificial infra-red sensors."<sup>2</sup> The small opening serves to project an extremely blurred heat image onto the receptors at the back of the pit.

The fact that the image is so blurred was quite problematic to researchers because the image was so blurred that it could not provide the perception necessary for a snake to strike as accurately as it does when using only its heat sensors.

Consequently, in 2006 three scientists researched the matter and found that although the image is impossibly blurred, it does contain all of the essential elements of a clearer image.

The brain of the snake contains an algorithm and the requisite arrangement of neurons for the calculation of that algorithm so that the snake can instantaneously reconstruct the image, locate its edges and present an image clear enough for it to strike accurately. They found that by use of the algorithm, the infrared system of snakes is "...far better than – any technical uncooled infrared camera with a similar number of detector cells."<sup>3</sup>

In evolutionary terms, this is quite inexplicable because the algorithm that is utilized by the brain of the snake to reconstruct the image is non-physical logic. The Darwinist is therefore placed in the position of having to theorize that the appropriate mathematics somehow became imprinted on the appropriate neurological sequences to take a grossly blurred image and instantly reverse engineer it to create neurological (electrical) representation of the original image.

To prove his case, the Darwinist has an impossible burden. He would have to show that the non-physical mathematics of the algorithm had been written by a series of accidental mutations and was thereafter permanently imprinted into a group of neurons that were themselves accidentally materializing at the same time. And then, somehow the neurons with the algorithm accidentally hooked up with the correct sub-network in the snake's brain so as to create awareness.

And how many generations of snakes were necessary to randomly produce this mathematical algorithm? Did the pits "occur" before the nerves that convey the information to the brain? If so, what

advantage to survival did they convey in order to perpetuate their existence?

Did the nerves pop into existence before the algorithm, if so why and how? Or did the nerves just happen to reflect the algorithm they grew? But what good is the algorithm unless it works, and it does not work unless it is complete.

Just think of how many chance mutations (generations of snakes) would have to occur to write an algorithm of this nature. How many generations of snakes would be required to incorporate the simple multiplication of  $12 \times 12 = 144$  into a neuro-net? Without an intellect to reason the result, how many different combinations are there of numbers up to just 12? What are the chances of simple accidental mutations reaching a correct mathematical algorithm for  $12 \times 12$ ? Assuming an arrangement of just 12 numbers, there are 479,001,600 different combinations. Sound incredible? See [CHANCES](#).

Concluding that all of that happened by means of a series of unobserved extremely fortunate mutations is quite a leap of faith even for a Darwinist.

But the Darwinist has another arrow in his quiver besides reason; he also carries the unshakable Darwinist presumption. He draws upon it when faced with a total absence of reason. The Darwinist's unshakable presumption is that that God, if there is one, is irrelevant to creation, so accidental beneficial mutations will have to explain it all – even if we have never seen one and even if the number of mutations required is beyond all reason.

Once that theological presumption is made, evolution can be made to explain absolutely anything. Evidence is no longer necessary and imagination drives the conclusions.

*"Even if there were no actual evidence in*

*favor of the Darwinian theory ... we would still be justified in preferring it over rival theories [creationism]" Richard Dawkins, The Blind Watchmaker (NY Norton, 1986), 287, emphasis in the original.*

Why not simply ignore theology and look at the observable facts and see if it is more reasonable to conclude that algorithms and neuro-nets [half the size of the United States](#) were designed or were the result of accidental mutations.

1. (Bullock and Diecke 1956; quoted by Andreas B. Sichert, Paul Friedel, J. Leo van Hemmen, *Mobelling inaging performance of snake infrared sense*, Proceedings of the 13 Congress of the Societas Europea Herpetologica, pp. 219-223 (2006)

2. Liz Tottenham. Infrared imaging research targets 'snake vision. *web publication - Discovery: Florida Tech*, DE-402-901:4-5, 2002.

3. Sichert, Andreas B., Friedel, Paul and van Hemmen, J. Leo, "Snake's Perspective on Heat: Reconstruction of Input Using an Imperfect Detection System" *Physical Review Letters* 97, 068105 (2006); see also <http://phys.org/news76249412.html> containing photographs and citations.

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