

Creation Matters

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An Evolutionary "Arms Race"?

by Dave Woetzel, MS

The young lions roar after their prey, and seek their meat from God (Psalm 104:21)

Historically, we can see that military progress in certain world arenas has been accelerated by the prodding of competition between regional states. The superiority of the Greek forces that would overrun the ancient world developed out of an intense rivalry among the Greek city-states. Medieval Europe's fixation on military competition and quest for supremacy led to multiple innovations in warfare. These would be copied by opponents, and oftentimes improved. Scientists would move from one side to the next. Alliances and allegiances between countries would shift. And so the process moved European military prowess far in advance of the rest of the world, so that Europeans in the Colonial Era could sail anywhere in the world and subjugate peoples by sheer awe as much as military superiority.¹ This competition that drove military and technological advances has been dubbed an "arms race." In more recent decades, such an arms



A cheetah on the S-28 at Lower Sabie, Kruger National Park (South Africa).

race, dubbed "the cold war," consumed much of the intellectual power and financial capacity of the US and the competing USSR.

Evolutionists, like Richard Dawkins, have used the metaphor of an "arms race" to explain the incredible adaption of natural populations living together in delicate balance in a given ecosystem.

Arms races . . . it is a colorful way

of talking about coevolution, particularly when it is coevolution between enemies: between predator and prey, between parasite and host. Adaptations on one side call forth counter adaptations on the other side, and the counter adaptations call forth more and so on, escalating all the time. The consequence is that the apparatus that we see gets better but the efficacy of it does not necessarily get better because the other side is getting better at the same time.²

Mammalian predator-prey relationships especially have been explained this way, as the carnivores evolve ever more potent weapons of pursuit and conquest, and the herbivores respond with ever more powerful capacities of avoidance and escape. Is this scenario of a natural world "arms race" realistic, or is it merely another "just so" story in the biological sciences

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Krao: The Perfect Missing Link

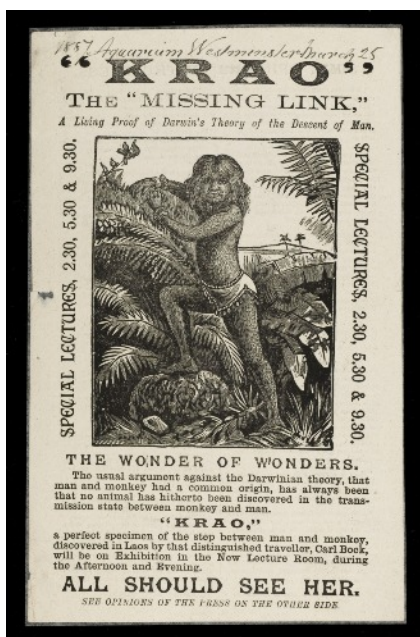
by Jerry Bergman, PhD

The publication of *Origin of Species* in 1859 gave new impetus to the idea that humans evolved from some type of ape-like creature. One of the most famous of the putative Darwin missing links was a female named Krao Farini (1876–1926). Consequently, some persons saw a very good marketing potential "providing the public with concrete evidence for Darwin's" theory. These opportunists included P. T. Barnum (famous for his production of "The Greatest Show on Earth") and Signor Farini (a pseudonym for the American William Leonard Hunt), both of whom "lost no time in ... legitimizing

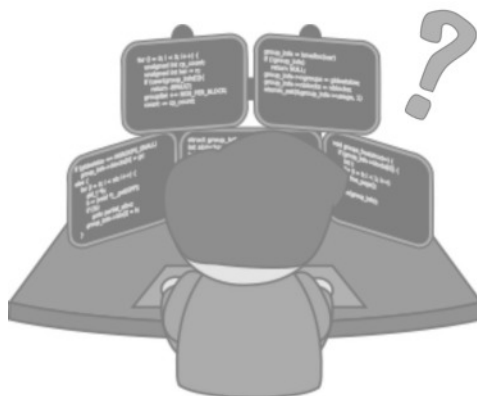
and promoting their shows through Darwin's ideas." (Donald and Munro, 2009, p. 177)

Krao was discovered in Indochina, in an area now known as Laos, by Carl Bock, who worked for Mr. Farini. First shown in Britain at the Royal Aquarium in 1883, "she was presented to the public as 'A Living Proof of Darwin's Theory of the Descent of Man.'" (Donald and Munro, 2009, p. 177) Supporters claimed that Krao filled the gap that Darwin's critics had used to dispute evolution. A major argument

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Welcome Images, 1887



us with prime numbers and their unique properties as a potent weapon for Internet security.

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Prime Numbers

A prime number can be divided evenly by only two factors: 1 and itself. For example, 3 is a prime number which is divisible by 1 and 3. Four is not prime since it is divisible by 1, 2, and 4. There are 168 primes between 1 and 1000, and an infinite number beyond that. Primes can be considered the building blocks of whole numbers. For example, the number 30 is the product of the primes 1, 2, 3, and 5.

Prime numbers are of great interest today for encryption, the scrambling of private data carried over the Internet. This coding of data goes far beyond password security. You may recall using a simple code for sending messages as a child, perhaps using the mapping A = 1, B = 2, etc. Today, sophisticated codes use prime numbers. Without discussing the technical details, one typically begins with two very large prime numbers, p and q , which are multiplied together as $c = pq$. The product, c , is called a public key and is freely available. However, the components p and q are the secret keys which code and decode the data using algorithms which are somewhat similar to our childhood A = 1 example, except they are extremely more complex.

The challenge for data hackers is that, given the product of two large prime numbers, it is very difficult to find the p and q components which can translate the data. In the race to stay ahead of infiltrators, ever larger prime numbers are discovered and applied as codes. One of the largest known primes at this writing is $2^{74,207,281} - 1$. This number has 22,338,618 digits, and would reach 30 miles in length if written out in 12-point font. When two such prime numbers are multiplied to make up a public key, it is practically impossible for an outsider to determine the original primes, which are the private keys to understanding the message.

When a web-page address starts with the prefix `https://`, the “s” stands for secure, which shows that public key encryption is being used to keep the content of messages secure. A fascinating and intense battle goes on in the computer world as cryptologists work to stay ahead of the cyber forces of evil. It appears that the Creator has provided

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“Arms Race” *...continued from page 1*

that has significant issues with probability under more rigorous scrutiny?

A poor analogy

The “arms race” scenario described above makes a poor analogy to the blind forces of random mutation. Even assuming that beneficial mutations do come along, and can actually be culled to express marvelous mobility systems, like those in the speedy cheetahs and gazelles, there is no coordination like that which occurs between human societies who can copy their opponents’ practices, respond to their opponents with new strategies, and hire their enemy’s inventors, etc. Actual observations of the mutations that are needed to sustain an “arms race” in some parasitic relationships demonstrate losses of fitness that would, in fact, make an “arms race” unsustainable.³

Consider conceptually what are the odds that both predator and prey would alternately receive minor mutations adding incremental improvements, as opposed to major, significant improvements that might grant a substantial advantage.

What are the odds?

For example, what would happen if even a sizeable improvement (or multiple successive improvements) happened in one population, and the other population languished for millions of years, spinning the dial and receiving no random beneficial mutation? Would not the balance be hopelessly upset and cause extinction of one (or maybe both) in short order? What if an environmental change (like a climate adjustment, or the introduction of a pathogen) affected the balance significantly? Is it reasonable to think this wouldn’t have happened over the hundreds of millions of years that it would take to slowly build up these extraordinarily adapted, balanced ecosystems?

Next, consider the spiraling effects of one group’s gaining a significant advantage. Obviously, the other group would start to rapidly decline. But not only would this begin to put things out of balance, it would escalate wildly. The population with the new, beneficial mutation would grow at the same time the other was shrinking. This would be particularly problematic if the predator population was growing, because it would take an increasing toll on the prey population. Moreover, their larger popula-

tion would be far more likely to receive more beneficial mutations, whereas the shrinking population would be far less likely to receive a compensating beneficial mutation.

Worse yet, as the smaller population became more segmented and isolated, struggling to avoid extinction, it would move toward a place where random drift, rather than selection, would become the prevailing population genetics paradigm. So even if a beneficial mutation did come along, it would be overwhelmed by the “noise” of random forces, and it wouldn’t even be preserved in the population.

Contrast this with a design paradigm for the predator-prey systems. God could have carefully designed capacities and abilities within large cats and savannah ungulates so that their genetic potential for speed, maneuverability, etc. was proportional. Granted, there would be micro-evolutionary capability for variation that could accentuate certain traits. But they would never be dramatically out of balance. Different large cats hunt with different strategies. Cheetahs hunt singly and count on sheer speed, maneuverability, and reflexes to win them food. Lions hunt together in a pride, using their combined stamina to run down particular individuals, especially those that are weaker or diseased. Certainly, populations can and do go extinct, but the fact that these balances can be maintained for millennia speaks to the incredible original design.

Only recently are we understanding that there are environmental feedback systems that allow populations to shift rapidly to adjust to changing environments, even predation pressure. Perhaps this epigenetic design could be viewed as a bit of an “arms race,” but it is still limited in its scope of biological change. And it is an expression of pre-designed systems that has nothing to do with random mutations. Suites of genetic changes that kick in when a population is in crisis or faces extreme environmental change are focused on conservation rather than evolution. These designed systems help keep the population around over the long term.

Natural brakes

Moreover, there are natural brakes that come into play. Whether in human populations or animal species, successful, growing populations can become lethargic and lazy. Diseases crop up more regularly and decimate chunks of the herd. As predators begin to outnumber prey, the predators will give birth

to fewer offspring, again helping to keep things in balance. One might ask, “Why can’t evolutionists appeal to similar balancing forces to keep population numbers from going out of whack over the hundreds of millions of years?” The answer is that they certainly could. But it defeats the hypothesized selection pressure to evolve the next innovation.

If populations are pulled into balance by natural forces, then it isn’t an “arms race.” The survival advantage of the beneficial mutation becomes less. It becomes that much harder to explain the evolution of all the amazing novelties in both predator and prey. Biologists are then left with only the design explanation to account for the wonder of a lion pride’s hunting prowess and a cheetah’s sprinting at up to 75 mph.

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Photo from Wikimedia Commons. 2008.

https://en.wikipedia.org/wiki/File:Cheetah_Kruger.jpg

GM

Missing Link

...continued from page 1

against Darwin's theory that "man and monkey had a common origin, has always been that no animal has hitherto been discovered in the transition state between monkey and man (Donald and Munro, 2009, p. 177)." Krao was not a freak of nature, but her condition was hereditary.

On exhibit at age 6

She was first exhibited in Europe when she was only about six years old, and soon thereafter was exhibited in the United States (Hartzman, 2005, p. 54). Krao was covered with thick, black hair, had a nose shaped like an ape's, and had cheek pouches that she could project forward almost to the same level as a chimp's — all traits that made her look very ape-like (Snigurowicz, 1999). As a child, she may have had a vitamin C deficiency that produced some of her ape-like features, such as her protruding lips.

She was first called an ape-child, then as she grew older an ape-girl, and, last, an ape-woman (Rothfels, 1996, pp. 126-163). When she was young, her child-like limbs gave the impression of being "monkey-like" (Donald and Munro, 2009, p. 177). Krao's face was described as "prognathic," and "her extraordinary prehensile powers of feet and lips gave her the title of 'Darwin's missing link'" (Gould and Pyle, 1896, p. 231). To help convince the public of her ape-human status, she was "fraudulently presented as having ... prehensile toes, [simian-like] cartilage in her nose, and other simian features" (Bogdan, 1988, p. 115). She was also often represented both in text and pictures as much hairier than she actually was (Donald and Munro, 2009, p. 177).

"Scientific" study

To support the circus' and scientists' claims, a corresponding member of the *Institution Ethnographique*, Mr. Kaulitz-Jarlow, did a "scientific" study of Krao when she was about age six. He described her as particularly ape-like, having thick, jet-black, smooth hair that covered her head and formed a virtual mane on her neck. He then pointed out in much detail "how closely her facial structure resembled that of the gorilla" (Drimmer, 1973, p. 163; see also Drimmer, 1991, p. 74). In fact, she was a typical Siamese girl, except she was suffering from a pathological condition (Rothfels, 1996, p. 163).

When a young girl, she was photographed in a jungle setting in poses that deliberately reinforced the public perception of her as an ape-human hybrid (Durant and Durant, 1957, p. 105). Farini also stated that Krao belonged to a tribe of extraordinary ape people who lived "high up in the trees," and subsisted on raw meat and rice. Although part of a race of ape-people, her keeper claimed, the King of Laos gave only Krao, and no one else permission to leave the country (Rothfels, 1996, p. 163). Mr. Farini claimed that he had received permission from the Burmese royal family to take Krao to England and to adopt her as his daughter. And he then claimed that "she was an example of Darwin's missing link" (Gylseth and Toverud, 2003, pp. 95-96).

Deception worked

The deception worked: the hairy girl from Thailand was a Ringling Brothers star for many years (Drimmer, 1973, p. 219). The exhibit was first displayed by the well known London showman named Farini. A critical factor was that she was discovered during "the heyday of the controversy over Charles Darwin's theory that man was descended from ape-like creatures ... and his followers were constantly hoping to turn up a creature intermediate between man and the apes" (Drimmer, 1991, pp. 162-163).

To stress this missing link claim, one exhibition pamphlet used a woodcut illustration of both her parents in a quasi-simian form and exaggerated hairiness. A picture, allegedly of her mother, showed her entire face covered with hair. Importantly, Darwin had seen these or similar pictures, because he mentioned them in his book, *The Descent of Man*, as evidence for his evolution theory (Donald and Munro, 2009, p. 177).

The fact was, Darwin's *Origin of Species*, although published close to fifteen years before Krao was put on display, was still much on the minds of the public. The attraction was enormously popular because belief in "evolution was becoming stronger, and scientists and naturalists alike were intrigued and widely fooled by the little specimen in their raw desire to prove the connection" of apes and humans (Homberger, 2005, p. 116). The two flyers of Krao, although they used the same text, showed two very different pictures of Krao. In one, she was dressed in only a loin cloth with a lush jungle foliage background, and in the second, the background pictured her "as a scientific specimen, stressing the infantile

qualities and thus the childhood of human-kind" (Donald and Munro, 2009, p. 177).

Her promoters "capitalized on the debate, offering Krao as proof of Darwin's ideas—a middle ground between man and ape... Some scientists took this 'missing link' claim seriously and actually" wrote papers on Krao as a missing link (Hartzman, 2005, p. 54). This support helped to market Krao as Darwin's missing link (Hartzman, 2005, p. 54). She was even displayed in some of the leading academic institutions of her day as a Darwinian missing link (Rothfels, 1996, p. 163). Homberger noted that Dr. A. H. Keane and others believed Krao was the missing link they were looking for, and his "examination of her confirmed, beyond a shadow of a doubt, exactly what they had been looking for" to prove ape-human evolution (Homberger, 2005, p. 116).

Missing link status accepted

This ape-like status and missing-link conclusion was widely entertained and even the newspapers helped to spread this "mistaken view" (Hutchinson et al., 1902, p. ii). Krao's manager claimed to have saturated himself in Darwinian ideas "in preparation for presenting Krao to scientifically discerning visitors" and marketed her as a "revelatory ethnological find." His effectiveness is indicated by the fact that "photographs of her are found in many scientific anthropological collections. As one commentator put it: 'he [Farini] had done ... in a few months more than poor Darwin had achieved ... in a lifetime.'" (Donald and Munro, 2009, p. 179).

When she was on display, researchers turned out in force to see this fantastic ape person (Gylseth and Toverud, 2003, p. 96). One example shows the police were smarter about the ape-man claims than some of the scientists. In 1884 Krao was exhibited at the Berlin Aquarium where "some unscrupulous show promoters thought it would be a fantastic idea to put her in a cage with 'other' apes—the German police did not think so" (Homberger, 2005, p. 116). They concluded that putting a small child into a gorilla cage was not only irresponsible, but also an act of faith that she was not human because "a huge debate raged regarding Krao and whether or not she was fully human. Thus, a case can be made that the promoters truly believed she was one with the gorillas and that the gorillas would see it that way too" (Homberger, 2005, p. 116).

Not all scientists went along with the

missing link idea. An example is Dr. Fauvelle who wanted to...

...accept Krao as a missing link, but he possessed a more scientific skepticism about the whole thing. Although he could see that Krao had physical characteristics that were very simian, her grasp of language, acute reflexes, and quick intelligence made him certain that Krao was pure human, afflicted with a condition of severe hirsuteness, and nothing more. She was not a half-ape after all (Homburger, 2005, p. 116).

The expert concluded that, although of normal intelligence, fluent in several languages, well-read, and of cheerful disposition, if Krao was annoyed, “her wild nature at once comes to the fore; she throws herself on the ground, screams, kicks, and gives vent to her anger by pulling her hair” (quoted in Drimmer, 1973, p. 163). Hartzman wrote that, in fact, “the supposed tree dweller was well-read, multilingual, and probably more intelligent than many of the gawkers who paid to see her” (2005, p. 54).

Ethnographic study shows that not only “were they presented as educational experiences, albeit increasingly lurid and sensa-

tionalist in their appeal, but that they were also accompanied by lectures, introductory ethnographic information, and endorsements by scientists themselves” (Donald and Munro, 2009, p. 182). Krao’s supposed “ape-like characteristics” were probably due to hirsutism, but she continued to be a star of the Ringling Brothers, Barnum and Bailey Circus until she died on April 16, 1926 at the age of 49.

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eKINDS

Examination of Kinds In Natural Diversification and Speciation

The Creation Research Society is pleased to announce a new research initiative—eKINDS.

How did we get the wide variety of today’s species from a small number of animals preserved on the Ark? How do new species form, and how does this fit within biblical creation? Can we trace the spread of the created kinds from the Ark to where they live today? These and similar questions will be addressed by the eKINDS initiative.

The Society is seeking donors willing to help fund this initiative. For more information on how you can help, please contact the Creation Research Society at (928) 636-1153 or crsvarc@crsvarc.com.

Matters of Fact

by

Jean K. Lightner, DVM, MS

Editor's note: You may submit your question to Dr. Jean Lightner at jean@creationresearch.org. It will not be possible to provide an answer for each question, but she will choose those which have a broad appeal and lend themselves to relatively short answers.

Q Do phylogenetic trees based on genetic data provide compelling evidence that humans are closely related to chimpanzees?

A No. When someone uses an algorithm designed to produce a phylogenetic tree, the result will be a “tree” regardless of whether there is any true genetic relationship through common ancestry.

Names, categories, and relationships

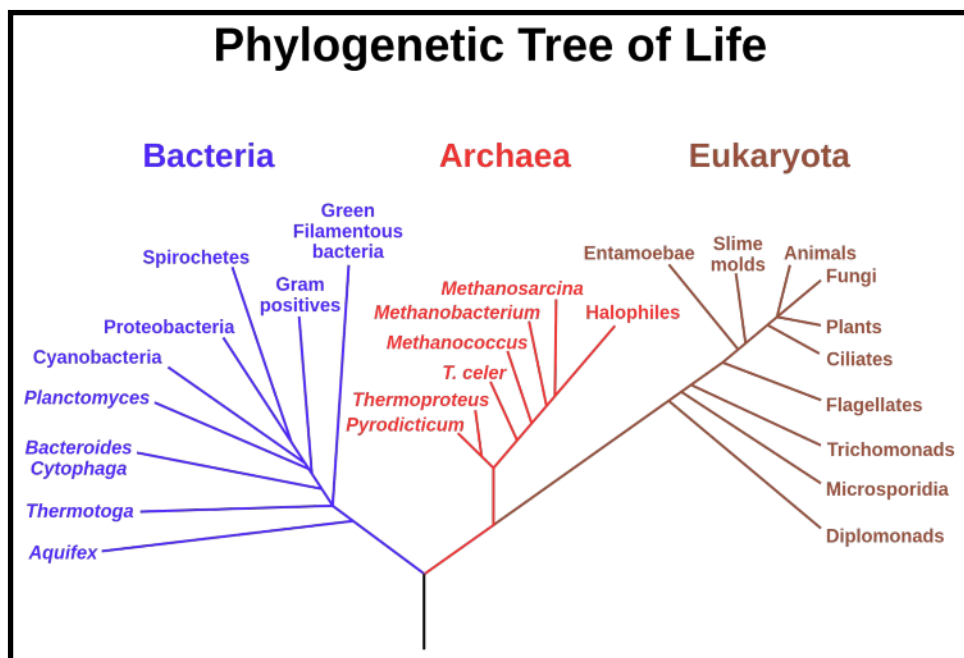
One of the first things Adam did after he was created was to name the animals that God brought to him (Genesis 2:19–20). He did this in a matter of hours, before God created Eve later that same day (Genesis 2:20–24; compare with Genesis 1:24–31). The rest of Genesis has genealogical lists which record how various people are related. So, naming, categorizing, and a desire to understand relationships have been part of human thinking since the beginning.

This continues today as scientists attempt to name and categorize plants and animals. As part of this process, there is a strong interest in knowing how various plants and animals are related. To answer these questions, important tools have been developed. In recent years there has been an explosion of genetic data, and many of the new tools are designed to obtain these genetic data, to align them so that they can be compared, and to generate a phylogenetic tree. The latter, then, is said to illustrate the inferred evolutionary history of the organisms presented therein. Like any tool, such “trees” can be used well, or they can be misused. To use them well, one needs to have some understanding of what they can and cannot do.

Nested hierarchies

Phylogenetic trees form a pattern known as a nested hierarchy. This is a natural way for people to categorize information. It can be used to show genetic relationships, such as in a genealogy or family tree. However, it

What Can Phylogenetic Trees Tell Us?



A phylogenetic tree based on RNA data. All species included will show up on the tree regardless of whether they are actually genetically related.

https://commons.wikimedia.org/wiki/File:Phylogenetic_tree.svg

can also be used to organize other objects [see also Lightner, 2012]. So a nested hierarchy, of which a phylogenetic tree is one example, does not tell us that the objects or organisms represented are actually related. However, if they are related, it can help represent how they are related.

Random numbers and pumpkin pie

It has long been known that random sequences can be aligned and used to create resolved phylogenetic trees (Simmons et al., 2010). Of course, they do not really represent a phylogeny, or evolutionary development and diversification, because they were based on random numbers. However, they look like they do.

Correct sequences are necessary for constructing phylogenetic trees. In recent years there has been a concern over the accuracy of some sequences submitted to GenBank, the National Institutes of Health (NIH) genetic sequence database or repository. For example, the sequence of a mitochondrial gene (cytochrome c oxidase subunit I, or “COI”) appears to be species specific, and has become popular to use in a practice called “bar-coding.” Its utility

depends on correct sequences, from properly identified species, being entered into GenBank. Then, someone with an unknown species can sequence its COI gene and determine if the sequence matches one of those in the database. If so, voila, they now have the organism identified.

COI is an essential protein-coding gene. Yet some supposed COI sequences have premature stop codons, which would prevent the production of a functional protein. These genes are now relabeled “COI-like” and may be from various nuclear genes. One researcher highlighted this problem by selecting these sequences from 11 random crayfish in a dataset. She then copied and pasted her favorite pumpkin pie recipe into a nexus file to be run with them. There were numerous error messages, which the researcher simply ignored. The pumpkin pie was found to be a sister taxon of one of the species of crayfish, with 100% bootstrap support (Buhay, 2009)! So, accurate sequences are essential, but it is also essential that the sequences represent real organisms that are actually related. [Note: “Bootstrapping” is a statistical means of assessing the data to determine whether one can have confidence in the result.]

Phylogenetic trees and creation

It could be asked, if one can show that a crayfish is more closely related to pumpkin pie than it is to ten other species of crayfish, isn't the whole process just garbage to begin with? In reality, with accurate sequences of organisms that truly are related, these phylogenetic trees can give us a glimpse at the history of the organism. Dr. Robert Carter has found this to be the case, as in his studies of humans and viruses (Carter et al., 2008; Carter, 2014). So the potential for meaningful results from use of this technique is there.

However, there still are some limitations. Sequences have to be aligned to be compared. Sometimes there appear to be gaps from nucleotides having been inserted or deleted in a lineage (i.e., "indels"). When this is the case, computer software can help "guess" how the sequences might match up. A recent study showed that these programs only work well on long sequences, in closely related organisms where indels are few and far between (Landan and Graur, 2009). Thus, it is possible that there have been enough changes within created kinds that this will not work well. Obviously, computer software cannot distinguish between dif-

ferences that were created by God, and those that arose by mutation throughout history. So the researcher still needs to be able to discern which organisms are actually genetically related for the resulting tree to be potentially useful in understanding those relationships.

Creationists have a lot they can contribute to this field if they are willing to apply themselves to understanding the intricacies involved (some of which are outlined in the previous references and in Williams and Ebach, 2010) and dedicated hard work. Correct sequences and clear thinking are needed, and when the organisms compared are truly related, this tool can provide valuable insight into a biblically consistent natural history.

Acknowledgments: I would like to thank Dr. Brian Vogt of Bob Jones University, who gave the excellent talk *A Critical Analysis of Molecular Homology* at the recent CRS conference, for providing the references which formed the basis of this article.

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Speaking of Science

from the Creation-Evolution Headlines

by David F. Coppedge

Editor's note: These S.O.S. (Speaking of Science) items have been selected from "Creation-Evolution Headlines" by David F. Coppedge at <http://crev.info> and are used by permission. Unless otherwise noted, emphasis is added in all quotes.

Evolution Is Not Truth-Based Inquiry

When your view has been falsified by evidence, but you prohibit other views, you are not engaged in truth-based inquiry.

In a book review in *Science*,¹ Marcos Huerta enjoys a fact-free suggestion about the Cambrian Explosion he found in Wallace Arthur's new book of sweeping generalities about evolution, *Life through Time and Space*. Shutting his eyes to fossil data, he switches on his imagination:

In the section on biology and evolution, I particularly enjoyed Arthur's treatment of the evolution and origin of animal life. Here, he uses a metaphor of trees rising from the sea to describe the different branches of evolution that led to the many forms of life on Earth today. One such tree produced animal life, another plant life, and still others led to fungi and brown seaweeds.

The same chapter discusses the mystery of the "Cambrian

explosion," which I had before believed to be a burst of evolution and new species. Arthur reveals, however, that it also may have been just an epoch of intense fossilization.

Problem solved! They just fossilized more intensely! Wait a minute. We know that cannot be true, because in many places (including China), Precambrian strata continue right into Cambrian strata without evidence of a break in time or conditions. If Precambrian strata could preserve delicate sponge embryos, they could have preserved the ancestors of the Cambrian animals had they existed. Can we get an empirical explanation next time, instead of "it may have"?

More disturbing is Huerta's endorsement of Arthur's dictatorial stance on scientific inquiry. Arthur "writes passionately and strongly against religious fundamentalism, both past and present, that suppresses truth-based inquiry." The irony here is rich. First, understand that the Darwinian definition of "religious fundamentalism" is 'any view that disagrees with materialistic Darwinian evolution,' including intelligent design (which is not religious, but based on following the evidence where it leads). This is how the theistic evolutionists at Biologos escape the dreaded "fundamentalist" label: they take the oath that any view of origins must be materialistic, unguided, and aimless—even if some 'god' way out wherever started the universe.

To think that intelligent design "suppresses truth-based inquiry

... continued on p. 8

ry” — oh, my goodness. Could a PhD creation biologist submit a response to *Science* magazine? How about *Nature*? How about *PNAS*? Could we teach public school students about the Cambrian Explosion? Could we encourage them to inquire critically about all the evidence pertaining to Darwinian evolution? Can we take the fake-science icons of evolution out of the textbooks, and encourage truth-based inquiry? Pretty please?

1. Huerta, M. 2017. The origins of intelligent life. *Science* 357(6351):556. DOI: 10.1126/science.aao0931.

Deadly Effects of Single Mutations

Is this the raw material for Darwinian evolution? The genetic mutations we observe can be catastrophic. *Medical Xpress* describes the tragic effects of a neurological mutation on certain afflicted children:

The extremely rare disorder is characterized by developmental regression and neurodegeneration. **At first the children lead normal lives and seem identical** to their age-matched peers. **However**, beginning at around 3 to 6 years of age, they present with **neurological deterioration, gradually losing motor, cognitive and speech functions**. Although the condition progresses slowly, most patients are **completely dependent on their caretakers by 15-20 years of age**.¹

Researchers at Hebrew University and Penn State found that this debilitating disease is caused by a single point mutation that represents one letter out of 3 billion letters in the human genome.

The researchers found in all patients the same **spontaneously occurring, non-inherited genetic change in a gene** (named “UBTF”) responsible for ribosomal RNA formation. Because of this small change, the patients’ cells are **flooded with ribosomal RNA** and are poisoned by it.¹

Another single-letter mutation is known to cause progeria, which is another progressive disease that turns children into old people in just 12 to 20 years.

1. Hebrew University of Jerusalem. (2017, August 3). Mysterious children's neurological disease is traced to a single error in one gene. *MedicalXpress*. Retrieved September 13, 2017 from <https://medicalxpress.com/news/2017-08-mysterious-children-neurological-disease-error.html>

When Does a Frog Become Deadly?

The poison dart frogs of Columbia carry a warning in their bright yellow skin: do not touch! There’s enough poison in one frog to kill 10 men at once. The poison acts by “reversing the openings of sodium channels in nerves, which prevents muscles from relaxing.” The heart muscle contracts to push blood through, but then cannot un-contract. A fatal heart attack usually results for those affected. Hunters in the jungle have learned to use this potent toxin to kill prey by dabbing it on the tips of their blow darts. These frogs are known as *Phylllobates terribilis*.

The toxin comes from alkaloids in the environment that the frogs ingest and store in their skin. Some researchers wondered, though, how the frogs protect themselves from their own poison.

The research is published in *PNAS*.¹

Prior research has shown that the active ingredient in the toxin is batrachotoxin. To figure out why the dart frogs do not give themselves heart attacks when they produce the chemical, the researchers introduced five naturally occurring amino acid replacements found in the frog’s muscles into rat muscles. Doing so, the researchers report, **made the rat muscle immune** to the effects of batrachotoxin. The researchers then tested the amino acids **individually until they found the one that was responsible** for the change N1584T. This finding overturns prior research results that suggested multiple factors were responsible for frog immunity—it shows that the immunity in the frogs comes from a single genetic mutation.

In effect, the mutation broke the effect of the toxin for the frog. This means that all the frogs without the mutation must have died, and only the “broken” frogs survived.

The frog story sounds like a case of natural selection, but if so, why didn’t the *PNAS* authors mention that? Why didn’t they mention natural selection, positive selection, beneficial mutation, or anything else that would make this finding a victory for Darwin? The paper talks about the “evolution of extreme toxicity” in this frog, but the frog did not evolve into a non-frog. It just broke its reaction to the alkaloids. That may have been “beneficial” to the frog—keeping it from dying of a heart attack—but those sodium channels are there for a purpose. You don’t want to tinker with highly-functional molecular machines like that.

The Darwinians expect us to believe that random genetic mutations are the seedbed of all the progress, improvement and innovation in the living world. That’s like expecting random bullets to improve functional automobiles and trucks. As Dr. Jerry Bergman said recently in a talk, “Evolution works: but in the wrong direction!” Mutations are almost always deleterious, and the “nearly-neutral” mutations that predominate without causing overt problems add up like typos in a book to degrade the genome, leading to mutational meltdown. Doesn’t intelligent design of the working machinery make a lot more sense?

1. Wang, S. and G.K. Wang. 2017. Single rat muscle Na⁺ channel mutation confers batrachotoxin autoresistance found in poison-dart frog *Phylllobates terribilis*. *PNAS* doi: 10.1073/pnas.1707873114

Aliens Discover Voyager Record

Certain humans are identifying with space aliens, pretending to know what they like.

Forty years ago, the Voyager craft were launched for a mission that would never end. The craft, even after depleted of fuel and electronics, would sail endlessly through the stars. The open trajectory of the Voyagers’ voyages prompted Carl Sagan to send a memento from Earth to any potential space aliens who might recover the craft, even though Earth might long have returned to cinder when our sun expands someday into a red giant, engulfing us all.

The memento took the form of a gold-plated record, encoded with photographs and sounds from Earth. But records are so 1977. Who knows if the aliens expect cloud storage now?

Surviving designers of the record describe their design rationale at *Space.com*,¹ but made generous assumptions at the time, such as the notions that the aliens are good at math, or that the craft could survive impact with a planet or star.

The likelihood of interception by space aliens has always been considered extremely low, even by true believers. Sagan undertook the Voyager Record project as somewhat of a publicity stunt, a message where the actual recipients would be ourselves. In *Murmurs of Earth: The Voyager Interstellar Record*², he wrote about how he consulted scientists, engineers, and various sci-fi writers, including Isaac Asimov, Robert Heinlein and Arthur C. Clarke, about the project:

Many of the consultants emphasized that receipt of the message by an extraterrestrial civilization was **chancy at best**, while its **receipt by the inhabitants of Earth was guaranteed**; the public would eventually have access to the message contents, as is in fact accomplished by this book. As [Bernard] Oliver put it, “There is only an **infinitesimal chance** that the plaque will ever be seen [by] a single extraterrestrial, but it will certainly be seen by billions of terrestrials. Its real function, therefore, is **to appeal to and expand the human spirit, and to make contact with extraterrestrial intelligence a welcome expectation of mankind**” (p. 11).

By syllogism, if the intended recipients are aliens, and humans are the guaranteed recipients, then we are the aliens. Sagan and party might not have considered that illogical. Consider that alien status is a matter of perspective. To the inhabitants of other planets, we are their aliens. And even if there are no space aliens out there, it’s trendy these days to identify as something other than what you are. The denizens of *Star Trek* conventions and *Star Wars* parties go to great lengths to identify with various alien beings: Wookies, Klingons, and even Jabba the Hut (some obese persons don’t have to change much). Who knows? Maybe some of them, like in the movie *Galaxy Quest*, are for real. [Cue *Twilight Zone* theme].

Human aliens enjoy anniversaries. Upon the 40th anniversary of the Voyager Record, some are re-listening to *The Sounds of Earth* and thinking it needs an update. *Space.com* tells how surviving relatives of Sagan and designer Jon Lomborg are releasing “The Voyager Record TNG” (The Next Generation) with a new mix, remastered sounds, and new selections. These can be beamed up to New Horizons, another spacecraft destined for the stars, reflecting the rapid pace of audio and communications technologies since 1977.

And how can the aliens resist, now that Captain Kirk (William Shatner) just beamed a message to the Voyager spacecraft to celebrate the anniversary? *Space.com* says his message was selected from 30,000 entries and beamed from NASA’s Jet Propulsion Laboratory on September 5 during a televised news conference at the Smithsonian Air and Space Museum in Washington, DC. The message says, “We offer friendship across the stars. You are not alone.” (Note: Shatner is not a starship commander, but he plays one on TV.)

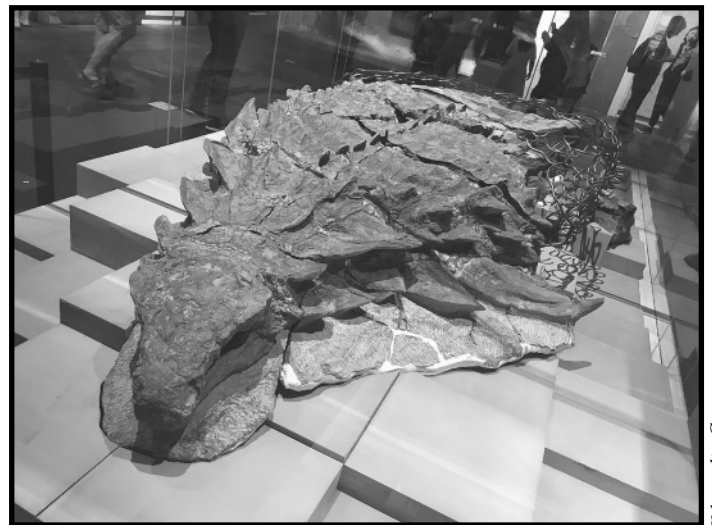
In the long scheme of things, though, 40 years is a tiny slice of the time expected for Voyager to reach the nearest star (about 40,000 years). Will the message even be recognizable after a thousand future technological revolutions?

It’s certainly an alien behavior for a human being to trust in

the existence of theoretical beings whose existence lacks any shred of evidence, especially if those beings have to have been the products of chance and ...[natural selection]. It seems alien to human logic, as well, to spend vast amounts of effort with infinitesimal chances of success. And it is unquestionably alien to decry intelligent design as pseudoscience while relying on it. Humans may be space aliens, but some humans are more alien than others.

The only non-alien status possible for a human being is to be within the family of God, our Creator. God has always offered friendship. We never were alone. But our sins alienated us from our Maker. Christ removed the barrier that alienated us by dying on the cross and rising again. Paul told the Gentiles who had come back to God through faith in Christ, “So then you are no longer strangers and aliens, but you are fellow citizens with the saints and members of the household of God” (Ephesians 2:18).

1. Lewin, S. (2017, September 5). Dear E.T.: Math on Voyager's Golden Record tells a story. *Space.com*. Retrieved September 13, 2017 from <https://www.space.com/38024-math-of-voyager-golden-record.html>
2. Sagan, C. 1978. *Murmurs of Earth: The Voyager Interstellar Record*. Random House, New York.
3. Lewin, S. (2017, September 5). William Shatner beams a message to NASA Voyager probes for 40th anniversary. *Space.com*. Retrieved September 17, 2017 from <https://www.space.com/38049-william-shatner-beams-message-to-voyager.html>



Borealopelta markmichelli, the Suncor nodosaur, 22 May 2017

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<https://commons.wikimedia.org/wiki/File:Nodosaur.jpg>

Wikimedia Commons

Spiky Dinosaur May Have Been a Softy

Soft-tissue remains on an armored dinosaur may indicate a role other than warfare. Incidentally, how old are those red crusts, really?

Nature News shows the skull of an armored dinosaur that still has remains of keratin on its head spikes.¹ “The thick body armour on some dinosaurs **seems perfectly engineered to foil hungry predators**,” Traci Watson writes, agreeing with most people’s intuitions. “**But** the remains of a newly discovered armoured dinosaur **hint that its spiky suit had another role: showing off to potential mates and rivals.**” Are those mean-looking spikes

just a fashion statement? And what about that soft tissue?

The bony plates of armored dinosaurs often preserve well, but in life they were covered with a protein called keratin (the same insoluble protein found in fingernails, skin, and hair). These proteins could have created attractive patterns of color, scientists at the Royal Tyrrell Museum of Palaeontology in Canada surmise. What they found on this beast, named *Borealopelta markmitchelli*, “exhibit the same growth pattern as antelope horns and other structures used for both defense and display,” according to museum experts.

The details add up to suggest that the **evolution of *B. markmitchelli*’s flashy spikes was driven by the demands of social communication.** The **adornments might** have provided a warning to potential foes, a **lure** to potential sexual partners — or both.

The argument that dinosaur armour had **a role beyond protection** makes sense, says vertebrate palaeontologist Thomas Holtz of the University of Maryland in College Park. “This is a nice indication that **there is more to armour than absorbing damage,**” he says.

Writer Traci Watson nowhere explores the obvious question: how could keratin protein survive for over a hundred million years of evolution time? All she does is describe it:

Fossils generally don’t reveal much about the size of a dinosaur’s spines when it was alive. Armoured dinosaurs were sheathed in bone plates, but that bone was also crowned by more flexible tissue made partly of keratin. **Such soft tissue is seldom preserved in the fossil record,** leaving researchers uncertain of the size and variety of these keratin caps.

But researchers got a rare glimpse of this soft tissue with the 2011 discovery in Canada of the first specimen of *B. markmitchelli*, **which lived 110 million years ago.** The **exquisitely preserved fossil** allowed Brown to measure both the keratin caps and bone plates from the animal’s snout to its hips. He found that the flatter bone plates closer to its tail were **covered with a thin crust of keratin.** But the keratin on the tusk-like spines protruding from the animal’s shoulders was much **thicker,** making up **one-third of the spines’ length.** **Chunky keratin ornaments also capped the bone spikes on the animal’s neck.**

Inverse Science reported in August that the keratin indicates that the dinosaur had a reddish hue.²

1. Watson, T. (26 August, 2017). Dinosaurs’ spiky armour may have been status symbol. *Nature News*. Retrieved September 18, 2017 from <https://www.nature.com/news/dinosaurs-spiky-armour-may-have-been-status-symbol-1.22511>
2. Ronson, J. (August 3, 2017). Geochemical testing shows this dinosaur was a ginger. *Inverse Science*. Retrieved September 18, 2017 from <https://www.inverse.com/article/35033-alberta-nodosaur-dinosaur-color-royal-tyrrell>

Miracles in Solar System Origin Theories

Skippping over a difficulty because it can’t be solved scientifically: that’s one giant backward leap for theory kind.

That’s the approach taken by secular materialists when trying to account for the origin of the solar system. They know full well that the “building blocks” of small grains, thought to have condensed out of a primordial gas cloud, do not stick together. They

bounce off each other or, worse, erode each other into smaller grains. Only when an accreting ball of grains grows to about a kilometer in diameter will the so-called “planetesimal” begin to accrete more material through gravity. That’s the problem—you have to start with small planets to get planets. But materialists need a theory from the bottom up: from molecules to planets. How can they deal with this giant hurdle? Two ways: (1) invoke miracles, and (2) employ a “big lie” tactic while doing it to make it sound convincing. Need proof? Look right here.

In *Science* magazine, Francesco DeMeo introduces a family reunion of sorts: “**Meet the primordial asteroid family.**”¹ Drum roll. Here comes the miracle and the big lie.

One of the major goals of planetary science is to understand the formation of all the bodies within our solar system, including the nearly one million known asteroids. There are **two main competing theories** The first and classical theory suggests that these bodies **formed incrementally, starting as dust grains and accumulating bit by bit** until they reached their final size. **The second and more recent theory suggests that these bodies formed almost instantly through the gravitational collapse of clusters of pebble-sized material in the protoplanetary disk into single bodies hundreds or thousands of kilometers in diameter** [editor’s note: the miracle]. **This method skips the meter-to-kilometer intermediate size range that has been problematic to quantify** with the classical method. On page 1026 of this issue, Delbo *et al.* **find compelling observational evidence** that when the asteroids formed, they were initially of large size, **thus favoring the second model.**

Hence, the “big lie.” Notice first that the evolutionists exclude creation as a model from the outset. That leaves secular materialists with only two models: gradualism and secular miracles. Instant planets, thousands of kilometers in diameter? How can they propose that? If you thought punctuated equilibria was a miraculous theory in biology, look at the miracle here. What physical force could possibly bring this about?

The paper by Delbo *et al.* actually infers the secular miracle in a roundabout way. They never test whether grains can actually condense into planetesimals with any experiments in a lab. All they do is count and measure asteroids. They find some orphan asteroids that they claim are 4 billion years old (in “evolution years,” that is). Through their convoluted thinking, this can only mean one thing:

We discovered a 4-billion-year-old **asteroid family** extending across the entire inner part of the main belt whose members include most of the dark asteroids **previously unlinked to families. This allows us to identify some original planetesimals, which are all larger than 35 kilometers, supporting the view of asteroids being born big.**

“Born big”? That is worse than claiming that humans exit the birth canal as adults. Here’s how they present the miracle of instant planetesimals: they only refer to previous papers, particularly one in 2008 by Cuzzi *et al.*² that only proposed a “scenario” because of “the poorly understood sticking of mineral particle aggregates and the apparent difficulty of growing beyond meter size due to rapid inward migration and collisional disruption.” Now, nine years since that proposal, Delbo *et al.* know that the problem remains unsolved:

Understanding the formation of the planetesimals, the

Quarterly Research Matters

Summaries* of Cutting-edge Research from the Creation Research Society Quarterly

Creation research that engages the current scientific literature and builds the creation model is crucial; CRS exists to support and publish such research. Only through high quality research can we equip others with strong, sound apologetics arguments that show the robustness of the creation model over that of evolution.

Accelerated Decay: Searching for the cause

The RATE project provided evidence suggesting that radioactive decay was accelerated in the past. This would explain why conventional radiometric dates do not correspond to a biblical timescale. The question naturally arises as to what may have caused this accelerated decay. In the Winter 2017 issue of the *Creation Research Society Quarterly* (CRSQ), Dr. Eugene Chaffin tackles this question.

One possible mechanism for a change in decay rate is a change in the strong and/or weak nuclear forces. This could be effected by a change in neutrino mass, which secular scientists have proposed occurred. Such a change may alter the propensity of a radioactive isotope to undergo a particular type of decay (alpha vs. beta). Dr. Chaffin also discusses the hypothetical acceleration field proposed by physicists, which could impli-

cate a nearby supernova as the cause of the change in neutrino mass.

Chaffin, E.F. 2017. Variable neutrino mass, supernovae, and accelerated decay. *Creation Research Society Quarterly* 53:180–190.

A Biblical Natural History

The Creation Research Society (CRS) is pleased to announce the first paper resulting from our eKINDS project: *Founder Events: Foundational in Rapid Post Flood Diversification*.

As evolutionists try to reconstruct the natural history of life on earth, they discover important patterns, but still lack a proper framework to understand them well. As creationists attempt to understand natural history from a biblical perspective, it is important to look at the work of evolutionists to understand not only their ideas but also their evidential and philosophical basis. In their Winter 2017 paper, Lightner and Ahlquist do this with the founder effect.

Based on the history in Genesis, we know there would have been an astounding number of founding events following Creation, and then again following the Flood, as creatures moved out into newly forming habitats around the world. Observational evidence indicates that migrating animals typically choose to stay and breed in the environment they find most suitable. This

suggests, in contrast to conventional evolutionary models, that migration naturally results in a better fit of traits to the environment than would occur by chance alone.

With this understanding, we can better see how the post-Flood circumstances set up conditions for the diversification and speciation that has occurred in animals within about four and a half millennia. By God's endowing his creatures with wisdom to find a suitable environment, there was a tremendous environmentally-based sorting of ancestral alleles, which is believed to be a critical factor in diversification. With this important foundation, other factors came into play to allow further diversification and adaptation. By God's design, life has reproduced and filled the earth, enabling us to see in God's creatures a glorious abundance of diversity in size, shape, color, and role in our world.

Lightner, J.K. and J. Ahlquist. 2017. Founder events: Foundational in rapid post-Flood diversification. *Creation Research Society Quarterly* 53:217–224.

Continued creation research is made possible by the generous gifts (time, money, and prayers) of our many supporters.

*Summaries compiled by J. Lightner.



building blocks of planets, is a crucial problem in planetary science. Traditionally, a **coagulation** process is invoked, in which **accreting collisions create bodies of all sizes** up to several hundreds of kilometers. **However, new models propose that planetesimals can form preferentially as 10^2 to 10^4 km in size directly from the clumping of dust particles in the protoplanetary disk, essentially skipping the formation of kilometer-sized and smaller bodies...**

The authors speak of “objects that were lost because of the collisional and dynamical evolution.” That makes sense; we know from experience that collisions break things down. Dynamical evolution can fling objects out of the solar system. But can chance instabilities organize planets instantly? Alan Boss³ felt like a heretic when he embraced the theory of disk instabilities forming instant gas giant planets, but he thought core accretion would work for inner planets. This paper shows it does not. It appears that heresy is becoming orthodoxy.

Everybody believes in miracles. Some believe in guided

miracles by an all-wise, omniscient Creator. Some believe in miracles of chance.

Everyone believes in the supernatural. Some refer to it as God's realm. Others restrict it to science, which is supernatural, because it is not composed of matter in motion.

So don't be fooled into falling for the faith vs science dichotomy. The choice is not between supernatural and natural, but which supernatural worldview logically coheres with the evidence.

1. DeMeo, F. 2017. Meet the primordial asteroid family. *Science* 357(6355):972–973. DOI: 10.1126/science.aao1141

2. Cuzzi, J.N., R.C. Hogan, and K. Shariff. 2008. Towards planetesimals: dense chondrule clumps in the protoplanetary nebula. *Astrophys J.* 687:1432–1447. DOI:10.1086/591239. Available online at <https://arxiv.org/pdf/0804.3526.pdf>

3. See *Creation/Evolution Headlines* for [3/21/06](#), [8/15/15](#)





All by Design

by Jonathan C. O'Quinn, D.P.M., M.S.

Throughout Nature, we find countless examples of seemingly “simple” creatures possessing behavior and other traits that make one wonder, “How did they know to do this?”

Let us look at the aquatic larval stage of caddisflies, which are fairly ubiquitous, moth-like insects numbering about 12,000 species. Caddisfly larvae measure 0.5–1 inch in length. As with other insects, they are highly concentrated sources of protein, and consequently, other aquatic animals such as fish find them to be a desirable food source. With few exceptions, caddisfly larvae instinctively “know” how to hide in plain sight.

They take bits of vegetation, small pebbles, twigs, and so forth, and build a tubular, protective case around their bodies by “gluing” the debris together, using a type of waterproof silk they excrete from the salivary glands of their mouths. The front part of the larva’s body can protrude, as needed, from the open end of the case to move about and search for food. Being made



Caddisfly larva in protective case.

of local materials, the cases are practically invisible to predators. Photos of a variety of cases may be seen at reference 2 below.

For this defense strategy to work, the caddisfly requires the simultaneous specialization of the salivary glands, to produce and spin silk under water, the innate knowledge of the need to hide from predators, and the understanding of how to construct a perfectly camouflaged, mobile case using locally available materials. I submit that this, as with all biological specializations, could not have developed by chance or in stages.

Hiding in Plain Sight

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3. Photo credit: Bob Henricks, 2015. Photograph of a live caddisfly larva in the genus *Pycnopsyche*. Retrieved September 11, 2017 from <https://commons.wikimedia.org/wiki/File:Pycnopsyche.jpg>. Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

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