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Creation Science dialogue

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Where did predators come from?

Dr. Gordon Wilson's presentations at Creation Weekend 2018 were extremely well received. The first lecture dealt with natural evil. Mankind has long pondered why our beautiful creation is so full of cruelty and death. Indeed our ecology as it is now, runs on death. And many creatures survive entirely by consuming other creatures. The big question, Dr. Gordon Wilson declared, is how this situation came to be since God created everything in an unfallen state, all of it very good. Moreover, Scripture tells us that there was no physical death, animal or human, before the fall. All animals were vegetarian.

Dr. Wilson pointed out that Darwin distanced himself from the idea of a good creation because he did not think that what we see in nature can be reconciled with a benevolent deity. So what should our response be to this situation? In order to fully inform our minds of the situation, Dr. Wilson described for us some of the most sophisticated weapons systems in the world. All of these examples come from living creatures. So how come God's very good creation now contains such horrible designs? The examples Dr. Wilson chose include jellyfish, cone snails, pit vipers, parasitoid wasps and the bacterium that causes Bubonic plague.

The jellyfish (and sea anemones and freshwater hydra) are supplied with tentacles with which they catch their prey. If a victim (like a small fish or crustacean) comes in contact with a tentacle, tiny cells in the tentacle skin explosively erupt, sending a very sharp harpoon-like structure into the victim. This tiny harpoon system delivers a sophisticated fast-acting nerve toxin into the victim. The jellyfish or other similar creature, then pulls the tentacle toward a central mouth and stuffs the victim into it.

The amazing design features of this all or nothing system are the specially designed cells in the skin with harpoon structures coiled inside, a trigger system to which the cell can respond explosively ejecting the harpoon with barbs to keep it from pulling out of the victim, a sophisticated nerve toxin (requires very precise and elaborate chemistry) and the ability of the tentacles to then shove the victim through the mouth and into the stomach-like cavity. This is obviously a designed system, not something that developed by chance.

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Aardvarks: Very Strange Mixed up Animals

by Jerry Bergman

Aardvarks (Aard-Vark, Dutch for "earth-pig"), are one-of-a-kind animals, one of the strangest mammals you will ever encounter. They have a body like a large rat, a long snout like an ant eater, a pig nose, long ears like a rabbit, pink skin with coarse hair like a pig (but in contrast to pigs, aardvarks have very thick skin and lack a fat layer), short legs, feet like a pig and a long thin tail that resembles a kangaroo's tail (Hutchins, 2004, p. 155). Their barrel-shaped body weighs between 100 and 180 pounds (50 to 83 kg). The greatly elongated head-snout is set on a short thick neck. The tail is thick at the base and gradually tapers. So strange was it that, when described to European naturalists, many doubted its reality (Catchpoole, 2014, p. 28).

The entire body is expertly designed to consume ants and termites. The 18-inch-long tongue secretes sticky saliva like ant eaters to help them ingest up to as many as 50,000 insects in one night (Burton, 1991, p. 2). Its highly developed salivary glands almost completely surround the neck to produce the sticky saliva to catch ants. It can also shove its nose into an ants' nest and suck up a meal like a vacuum cleaner. The narrow, flat tongue can roll up like a straw to suck in small passages.

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Creation Weekend Wonderful Again!

Despite the fact that Edmonton suffered through periodic snowfalls from mid-September onward, the days before the Creation Weekend and on the weekend itself, were warmish and dry. As a result, a number of people were able to drive long distances to our sessions. Some people came from Grande Prairie, the Northwest Territories, northwest British Columbia, Calgary and far southern Alberta. Those from far and near all appreciated the sessions.

Teams of volunteers helped out by setting up the displays, staffing the book table, welcome (information) tables, and ushering. On the Friday evening, a club of young teens from a church in St. Albert performed duties such as ushering in a most professional manner. People at the book table were kept busy helping customers to find resources and re-stocking the table. Dr. Wilson's first presentation is described elsewhere in this issue. On Saturday morning a team of people arrived very early to prepare food for complimentary light refreshments. Many people enjoyed coffee, muffins, fruit and yogurt before Dr. Wilson's second presentation. CSAA's annual general meeting was then held, followed by a catered luncheon. Most people said that they would not need to eat supper after that!

Finally, Dr. Wilson presented his last lecture of the weekend. His talk on ecology was accompanied by sound effects, and actions to accompany his remarks, and video clips, all to the delight of the audience. Following more informal discussions, the weekend came to a close. The whole event was a time of inspiration and blessing for many.

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Where did predators come from?

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All the features have to be present for the system to function at all.

Dr. Wilson then described the distressing capacity of cone snails to shoot a hollow "tooth/harpoon" into the mouths of fishes. The tooth is hollow and injects a nerve toxin into the prey. And interestingly the chemical design of the nerve poison is specific for maximum impact on the preferred victim.

Next on his list of horrible creatures, Dr. Wilson described pit vipers. They are equipped with a pit organ (infrared eye) below and between the eye and the nostril, which helps this creature locate victims through their body heat. The hollow fangs fold into the mouth for convenient storage, but they snap outward in order to inject nasty enzymes which digest the victim's flesh.

Parasitoid wasps seem even more creepy. Some species lay their eggs in the body of a caterpillar. The eggs hatch and larvae consume the caterpillar's insides. At the same time, they are careful not to munch on the vital organs so that their food source (the caterpillar) will continue to live and to grow. In the end the wasp larvae burrow out and spin cocoons on the surface of the caterpillar. The victim dies as new wasps fly away to find more victims. Darwin found this example particularly distressing and an argument against a God who created everything good.

For his last example Dr. Wilson chose the Bubonic plague bacterium *Yersinia pestis.* This tiny germ has been responsible for more than 200 million deaths in the world and it changed the course of world history, certainly in Europe. Why is it so deadly?

Obviously the bacterium is specially designed. Its critical feature is a syringe-like molecular machine called the type three secretory system (T3SS). If the bacterium is living in insects like fleas, these cells are quite harmless. Once the bacteria find themselves in people or other mammals, these tiny cells arm themselves with injector systems which project from the outer surface of the cell. These tiny machines are embedded in the bacteria's cell membrane. The needles project out into the warm-blooded environment. Once a needle touches the surface of a host cell, nasty proteins are manufactured in the bacterium and these are pumped through the hollow needle into the victim's cell. The very specific injected compounds now disrupt the cell's immune response. Each bacterium then multiplies causing more disastrous symptoms in the victim.

There is no doubt that these phenomena are not what Genesis describes as "very good." Dr. Wilson outlined four possible explanations for how disease and death appeared. One idea, suggested by some, is that Satan retrofitted creation. But why should we assume that Satan had this capacity? Moreover, the Bible describes situations where God has ordained negative features in creatures. For example, God speaks of His Leviathan thus, "Who dares open the doors of its mouth, ringed about with fearsome teeth?" (Job 41: 14). And in Isaiah 45 we read "I make well-being and create calamity." (v. 7) God controls it all.

Another suggestion is that spontaneous processes led to degeneration of the ecosystem. This would be too gradual to fit the Biblical account. The third idea is that God transformed the biology after the fall. Some would call this divine retrofitting! Many people support this view. A last explanation is that in their original design, creatures contained both benign and latent malignant features. After the fall there was a shift in how the overall design of a creature was expressed. For example, frogs are plant eaters as tadpoles, but entirely carnivorous (mostly insects) as adults. These two seemingly opposite designs coexist in one organism and are expressed sequentially. Similarly, Dr. Wilson suggested that the latent weapons systems were woven into the genetic constitution of creatures and these were not expressed until after the fall.

There is so much to learn about the creation, but the response of Darwin to reject God on account of natural evil is sad. Our best response is to continue to reflect on these things in the light of God's Word.

In the next issue Dr. Wilson's later two lectures will be reported.

Aardvarks: Very Strange Mixed up Animals

Continued from page 1

by Jerry Bergman

The teeth, instead of having a pulp cavity as is true of all other mammals, are one-of-a-kind, consisting of a cluster of 1,500 thin, hexagonal, parallel tubes. They are constructed of a modified form of dentine held together by a protein cement. Although born with conventional incisors and canines in the jaw's front, they are soon discarded and are not replaced. An adult aardvark has only rootless cheek teeth at the back of its jaw. Lacking an enamel coating like most mammals, the teeth are worn away with use, and continuously regrow (Hutchins, 2004, p. 157).

Using its super sense of smell and hearing to locate insect nests, an aardvark may travel miles for its ant or termite meals. The ears can be moved independently and can be folded back and closed for protection from dirt when the creature is in its burrow. Conversely, the main burrow can be up to 20 feet (6 meters) deep and is constructed by using long, strong, sharp claws. While foraging for food, aardvarks keep their nose to the ground and ears pointed forward. They will usually not repeat a food search route for several days to allow time for the nests to recover. These nocturnal creatures live in African rain forests and savannahs (Gregory, 2015).

To avoid the daytime heat they spend daylight hours in their dark, cool, underground burrows. This shelter can be shallow or deep, simple or complex, with many tunnels (Niver, 2017, p. 20). This comfortable dwelling is designed for both refuge and for sleeping, as well as being a permanent home. It is also used for breeding, and has several entrances to escape enemies. Refuge burrows are scattered around the home range.

When threatened, the shy animal usually will run, often into its den for safety. Or as good swimmers it may escape in the water, even in strong currents. A threatened aardvark can run in zigzag fashion to elude enemies. If attacked in the tunnel, it can escape by placing fresh fill between itself and its predator. If all else fails, it can stand on two legs and use its strong claws to defend itself, sometimes flipping on is back to lash out with all four feet. It is capable of causing substantial damage to the unprotected areas of an attacker.

When leaving its burrow at night, it pauses at the entrance, sniffing and perking its ears up listening for possible enemies. If no threats are perceived, it begins foraging. The aardvark regularly changes its home burrow layout, and periodically moves out to construct a new one. When vacated, the old burrows are soon inhabited by other animals (Burton, 1991, p. 2).

An aardvark uses its long snout to sniff out insects. When it locates an ant colony or a termite mound, its long claws raid the nest. Its front feet have four toes each, and the rear have five toes. Each toe sports a large, somewhat flattened and shovel-like nail to effectively dig. It can dig a yard-long tunnel in about five minutes, often faster than humans with a shovel (Hutchins, 2004). Its highly mobile snout tip is moved by modified mimetic muscles. The dense hairs surrounding its nostrils help to filter particulate matter. The aardvark's very tough skin and ability to close its nostrils help protect it from dust and insect bites (Burton, 1991, p. 2).

Digestive system

The aardvark is a solitary, nocturnal animal, feeding almost exclusively on ants and termites (myrmecophagy). The only known plant consumed by aardvarks is a fruit called the aardvark cucumber, with which they have a symbiotic relationship. The seeds they defecate near their burrows grow rapidly due to the loose soil from their digging, and the area's fertility. The aardvark's intestine aids the cucumber growth by softening the seed coat, and the fruit provides needed moisture for the aardvark. Like ant eaters, the aardvark's stomach uses its muscular pyloric muscles like a gizzard to grind food, rendering chewing unnecessary.

Mating

Aardvarks pair only during breeding season. Both sexes emit a strong-smelling secretion to attract mates. After a seven-month gestation period, one pup is born that looks like a pig with a long schnoz. It is weaned between three and four months. At six months, it can dig its own burrows. It lives for 18 years in the wild, and up to 24 in captivity (Niver, 2017, p. 24).

Senses

The snout resembles an elongated pig snout. The small, tubular shaped mouth is typical of species that feed on ants and termites. The nasal area contains ten nasal conchae, more than any other placental mammal. Its nose also contains more turbinate bones than any other mammal, between 9 and 11

compared to dogs 4 to 5. It also contains nine olfactory bulbs, more than any other mammal. Its keen sense of smell is due to both the number of bulbs and its very large olfactory brain lobe. Its disproportionately long ears, (20–25 cm or 7.9–9.8 in) are an important part of its superior hearing. Small eyes, consisting only of rods, produce poor day vision, which is compensated for by good black and white night vision.

Aardvarks Baffle Evolutionists.

Evolutionists are totally stymied by this animal. Colloquially called the "African antbear" or "anteater," the aardvark looks like a cross between a pig and an anteater but is not related to either animal. Rather, it is a member of the obscure mammalian order Tubulidentata. Although a few other ancient Tubulidentata species and genera are known, the aardvark is the only living member. Tubulidentata is a wastebasket taxon, used to place animals that do not fit anywhere else.

Its chromosomes are considered by research to be highly conserved, meaning that they have a genetic arrangement very similar to more primitive animals. Based on fossils, Bryan Patterson speculated that early aardvark relatives appeared in Africa around the end of the Paleocene. Since there has been no basic change in the aardvark in all that time, it is called a 'living fossil."

In spite of the fact that Aardvark fossils dated to 5 million Darwin years have been found throughout Europe and the Near East, "they give us no real clue to the aardvark's ancestry or its connections with other animals." (Burton, 1991. p. 2). Another authority wrote "the classification of the aardvark is still controversial." (Knöthig, 2005, p. 25). He added, "Similarities with the great anteater … arise from convergent evolution as a result of the same diet." Convergent evolution is a euphemism used to explain similarities that cannot be attributed to shared lines of descent. The problem with the idea of convergence is that aardvarks must first have the complex design described above to survive on an insect diet. But natural selection of mutational changes cannot "explain how the various aardvark design features could have arisen once, let alone multiple times" (Catchpoole, 2014, p. 29).

Evolutionists have used genetic and biomolecular studies in an attempt to resolve the classification conundrum. Instead of supporting the existing classification, the data forced a huge reshuffling of previously-claimed evolutionary lineages. Biomolecular tests have variously attributed the aardvark's 'closest relatives' to elephants, hyrax's, dugongs, golden moles, tenrecs (small, spiny rodents similar to hedgehogs), manatees, and elephant shrews (Arnason, et al., 1999, p. 538; De Jong, W. et al., 1981; Lehmann, 2009; Ratzloff, 2013).

Some modern evolutionists have even implied that every mammal (including humans) descended from a common ancestor genetically similar to the modern aardvark. If that were true, it would make the aardvark one of our 'closest living relatives' of our supposed 'common ancestor'! (Yang, et al, 2003, p. 1062). Nevertheless, it is still true that "one of the great enigmas of mammalian phylogeny is the genealogical relationship of the aardvark." (De Jong, et al., 1981, p. 538). As a matter of fact, we all too often find that one taxonomy is "strongly supported by DNA sequence data but not by their disparate anatomical features" (Yang, et al, 2003, p. 1062).

In short, the "aardvark is out on an evolutionary limb, a species all on its own with no close living relatives" nor any clue of where it could have evolved from (Knöthig, 2005, p. 28.)

This specialist claims, "the aardvarks arose from a primitive form of the hoofed animals," but he has no evidence as to which one (Knöthig, 2005, p. 26). One "guess is their common ancestor is the ptolemaiidans, a mysterious clade of [insectivoran] mammals," but beyond this guess, even though we have been trying to determine their phylogeny since before the year 1879, we have no idea where they could have evolved from (Oustalet, 1879, p. 573). In short, the aardvark "is a very extraordinary animal and there is no other animal on earth similar to it." (Knöthig, 2005, p. 1). From what is known, the first aardvark was a modern aardvark.

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Insect Talents are Special

by Margaret Helder

Biologists tell us that the ability to detect and identify odours is perhaps the most important sense that animals need to survive. By means of odour detection, insects locate food, avoid toxins and predators, and communicate with others of their own species. Their sense of smell is located mainly in their antennae.

One insect that is particularly talented in many respects, is none other than the famous fruit fly. For example, these red-eyed beauties exhibit extremely good abilities to find rotting fruit. Because fruit flies are easy to culture, biologists first studied odour detecting talents in these creatures. The study was expected to be interesting but scarcely earth-shattering. But guess what! *Drosophila* (fruit fly) was the tip of the iceberg to reveal that insects exhibit odour detecting abilities that are highly unusual and a major problem for evolutionary expectations. Since then similar studies have been conducted on moths, beetles, other flies, cockroaches and social insects.

When biologists discuss a phenomenon in terms of its "unexpected" features such that it is "surprisingly unconventional" or "surprisingly different" (as per Benton, Sachse, Michnick, and Vosshall. 2006 *PLoS Biology*; and Tal Soo Ha and Dean P. Smith. 2009. *Front Cell Neuroscience*), we understand that the phenomenon does not fit evolutionary expectations (theory). These scientists were referring to the system of detecting odours which they had observed in insects. Apparently the odour detection apparatus in insects is different from that of all other animals. In addition, the composition of the proteins is not only totally different from those of other animals but there is an astonishingly high variety of these molecules, even among insects themselves. Indeed, a recent article in *Nature* refers to relevant proteins as displaying "striking sequence diversity, with an average of only about 20% amino-acid identity shared between odour receptors, either within or across species. (Butterwick *et al.* 2018. *Nature* August 23 p. 447). According to known biochemical processes, this large amount of variety could never develop naturally!

According to Darwinian theory, new proteins appear through gradual change over time from already existing molecules. Recent studies however suggest that it is impossible to produce a useful protein through this process. How much more so, the possibility of developing a protein from scratch is clearly a literal impossibility, even with the most optimistic evolutionary explanations. This relates to the nature of proteins (which form most of the structures in living creatures and the living cell.)

Suppose we seek to obtain a protein which fulfills a specific purpose. A protein is made up of a particular order (chain) of small molecules called amino acids which have been assembled in the cell. This chain must fold into a very particular three-dimensional shape if it to exhibit its function. This ability to fold is determined by the electrical attractions of the component amino acids. Douglas Axe, of the Discovery Institute but then at Cambridge, performed experiments on proteins to discover how common (compared to all possible sequences of amino acids) functional proteins might be. He discovered that they are exceedingly rare. Thus he declared in his book *Undeniable* (2016): "Of the possible genes encoding protein chains 153 amino acids in length, only about one in *a hundred trillion trillion trillion trillion trillion trillion* is expected to encode a chain that folds well enough to perform a biological function!" (p. 181 italics his)

A chain of 150 amino acids is actually small, many proteins are composed of thousands of amino acids, so the probabilities of finding such a protein become even more remote. The probabilities are far too small to consider random development of any protein to be possible. Thus evolution theory cannot explain the develop-

ment of even one new unique protein. But among insects, possibly hundreds of thousands of odour receptor proteins show no similarity to other proteins, so they cannot be explained as developing by gradual change over time (the favoured Darwinian explanation.) The only way that these proteins could come about, is through the skill and choices of an intelligent supernatural designer!

Not only are insect odour receptors "the largest family of ion channels found in nature" (p. 452) but they lack similarity (homology) to any other protein family. (p. 447) This means that the odour receptor proteins in insects are not like any other protein known from any other creature for any other use. They are absolutely unique! The scientists assure us that "different species [of insects] have evolved unique repertoires of receptors suited to their specific chemical environments." (p. 447) When one thinks of insects as needing to locate everything from dung, to carrion, to beautiful flowers and warm-blooded people, one can understand that a wide array of odour receptors is needed among this group of organisms. Thus the authors of the *Nature* article remark that "A hallmark of insect olfactory receptors is their inordinate diversity within and across insect lineages." (p. 451)

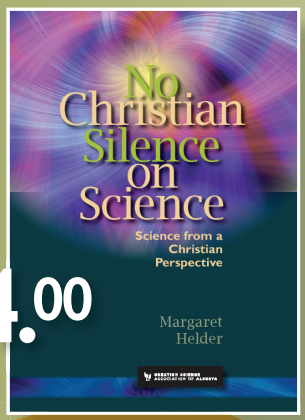
The shape of the odour receptors is actually a thing of beauty. Imagine a living cell's protective membrane as a thickish layer extending around the cell. Extending through the layer are vase shaped pores. Covering each quarter of the pore, from top to bottom, is a seven-layer protein. This protein coating is flared outward at the upper and lower cell membrane edges to allow for a seven-fold penetration to the exterior and interior of the cell. Two of the four pore coating proteins are a standard composition which is unique to insects but basically the same form for all of them. The other two proteins look similar but they are highly unique, even among insects.

Odour causing molecules attach to the unique seven loops which extend outside the cell membrane. A nearby nerve ending is stimulated to send an electrical signal to the brain. Depending upon the number of different kinds of odour receptor molecules stimulated, the brain identifies an odour of interest to that insect. The damselfly has just 4 different kinds of odour receptor molecule whereas some ants possess more than 350. Obviously the ants live a much more complex life-style.

Organisms with the capacity to smell, other than insects, also possess a seven transmembrane oderant receptor, but composition of the proteins is totally different from in insects. Despite the significant problems for evolutionists in explaining the sudden appearance of insect odour receptors, some experts point to a common blueprint that both insects and other animals display. Benton *et al.* in *PLoS Biology* declare that there are anatomical and functional parallels in odour detection despite the "completely different molecular solution" between these groups. They appeal to that popular term "convergence" to explain what evolution theory cannot in fact explain: "That their odour receptor families should have unrelated evolutionary origins highlights the remarkable convergence in anatomical and physiological mechanisms that mammals and insects display." How did they by chance develop a similar way of operating, when the structural components are so different?

What we have discovered is another case of a common blueprint expressed in different ways that could never have developed via an evolutionary pathway. Indeed, as Casey Luskin declared: "[M]odern genome sequencing has discovered thousands of 'orphan genes' – unique genes that exhibit no homology (sequence similarity) to any other known gene. These genes ought to refute common ancestry because they cannot be compared to genes from other species, and thus do not fit into any phylogenetic [evolutionary] tree. The problem is usually ignored." (*Theistic Evolution.* 2017. p. 391-2). Let us therefore not ignore this information but reflect on the One who is able to design molecular machines and the amazing variety of molecules to form those machines.

For discussion of human noses see "Nifty Noses" *Dialogue* October 2004 www.create.ab.ca/nifty-noses/#more-446



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Margaret Helder

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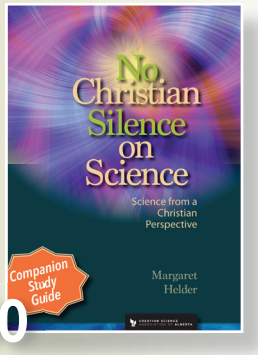

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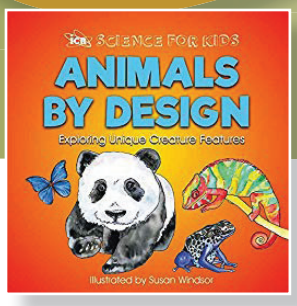

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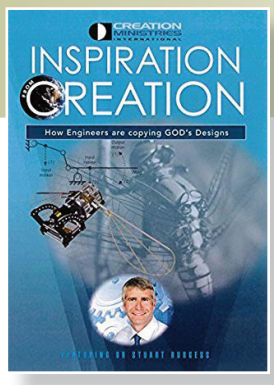

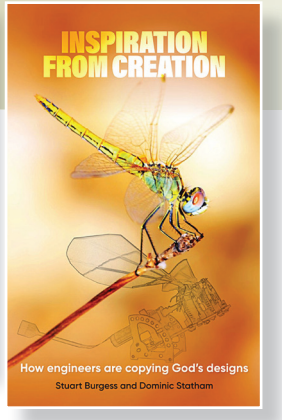

Stuart Burgess and Dominic Statham

Inspiration from Creation: How engineers are copying God's designs

Contrary to the evolutionary view that predicts sloppy design in nature, engineers are finding amazing natural design solutions for many of our technological problems. With a resume that includes designing machines for industry, medicine and space exploration, Drs. Burgess and Statham share some interesting insights into the design process.

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