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Creation Science

Jalogue

f the five senses which keep us in touch with the world, most of us are particularly aware of eyesight and hearing. Of course we are very thankful for these gifts. One sense that we tend to take for granted however, is the sense of smell. This sense does not seem very complicated or amazing. Nevertheless a little research reveals that our sense of smell is not only exquisitely designed, but it is also poorly understood by biologists. Of all our senses, that of smell seems to be the most complicated.

When we consider the other senses, we discover that taste involves four basic kinds of receptor (salt, bitter, sweet and sour) on the surface of the tongue. All

taste sensations are combinations of messages from these four receptors. Colour vision similarly involves three kinds of receptor: specifically for green, red and blue light. All visual images come from messages to the brain sent from these three colour receptors as well as from a receptor for light itself. The ear, on the other hand, is said to be the most sensitive human organ. The hair cells in the inner ear are all much alike whether they are designed to detect bass tones or treble tones or anything in between. The sense of smell on the other hand, is quite a different proposition. Imagine a sense which involves 350 entirely different kinds of receptor. It is evident that smell is more interesting than we might have expected.

Biologists expect that the number of odours which an organism can detect, is proportional to the number of relevant genes. In people, about 350 different genes code for 350 different receptors. This is a very large cluster of related protein coding genes, the largest block of genes discovered so far in the human genome. This is an interesting fact when one considers all of the complicated functions of the human body. If the number of genes discovered in human DNA totals about 22,000 (as many experts now believe), then the proportion of genes coding for smell receptors is about 1.5% of that total.

The reason that we need so many receptors is because of the wide variety of chemically different odour causing molecules in the air. The receptor molecules in the nose are located on tiny projections emerging from nerve cells. These projections are located in the mucous membranes high up in the nose. When an odour molecule collides with an appropriate receptor, the two fit together like lock and key. The receptor protein then initiates a chain of chemical reactions in the nerve cell's membrane so that the electrical condition in the nerve cell changes. As a result, the nerve cell sends an electrical impulse toward the brain. The stimulation of various combinations of the 350 different kinds of receptor in the n o s e , results in the perception of at least

≤ 10,000

different odours. Each receptor responds to just one part of a molecule's structure. Thus, if there are several reactive sites on the surface of one molecule, several different receptors may be stimulated at the same time by this one type of molecule. The blending in the brain of the different messages, leads to the sensation of a specific odour.

Some smells are mixtures of large numbers of air borne molecules. That lovely aroma of coffee, for example, contains about 500 different kinds of molecule. Although we understand these basics, the chemistry of our sense of smell is

nevertheless far from clear. Some molecules with very different composition, nevertheless smell much the same. Moreover, some molecules that are extremely alike, nevertheless elicit entirely different sensations of smell. Mirror images of an organic molecule called carvone, for example, smell either like cumin or peppermint, depending upon which arrangement the component atoms assume.

A recent article in the online journal *Public Library of Science Biology* (May 2004) was entitled Unsolved Mystery – The Human Sense of Smell: Are We Better Than We Think? (p. 572-575). The popular perception, so author Gordon Shepherd declares, is that the human sense of smell is much less effective than that of some animals such as dogs, cats and rodents. Well maybe we should think again! Although humans have only 350 functional

chromatograph) designed to detect airborne chemicals. Thus the author concludes "humans are not poor smellers But rather are relatively good, perhaps even excellent smellers." (p. 573) The author ponders how it is that people have such excellent noses when they have so "few" detector molecules compared to various animals. The popular evolutionary interpretation is that people lost their sense of smell as they gained in brain power and the ability to walk upright. Obviously the scientists need to reconsider. We now know

olfactory receptor genes, compared

to much higher numbers for other

mammals, it turns out that humans

perform extremely well in odour detection tests. For example, when

tested for the lowest amount of a

chemical which they can detect,

people performed better than dogs

in some tests and much better than

outperformed even the most sensitive

machines (such

as the gas

rats in others. Moreover, humans

- continued on page 7

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What started as a dream, will soon be reality. Visionary Harry Nibourg dreamed of a museum to demonstrate the truth

MUSEUM

COMING

CREATION SCIENCE

world. These fossils and artifacts open the door to explaining a worldwide flood as the catastrophe that provided the environment

> necessary to form most of the fossils.

The exhibits will include displays on the following: icons of evolution, the bacterial flagellum, living

of creation. Friends like Edgar Nernberg, and Vance Nelson of Creation Truth Ministries, encouraged this idea. Ray Strom serves as an advisor. Others like Albert and Lori Reule and Leslie Enns complete the team.

This past February, four of the organizers spent two weeks in Tucson, Arizona to purchase museum quality fossils and models at the world's largest rock, gem and fossil show. Mr. Nibourg had already purchased the property, built the museum building (Phase One), and procured some materials for the various exhibits planned for the Big Valley Creation Science Museum.

The Village of Big Valley is located about 60 km north of Drumheller. The property is ideally located across from the train station. About 20,000 to 30,000 tourists visit this small village every year via steam trains that come from Stettler. This will provide the museum with a steady flow of tourists, some even from foreign countries.

Fossils and dinosaurs speak to all ages. They are a non-threatening way to provide the public with an education in the true history of the fossils, geologic processes and the age of the Earth, dinosaurs and humans, fossils and the flood (with a Noah's ark model), and genealogies back to Noah. Full size head models of an *Albertosaurus*, a *Dilophosaurus*, and an oviraptor will be part of the

by Lisa Derksen

to set up a small creation museum in Calgary. Recently he purchased a 3-foot fossilized fragment of a palm leaf in Calgary's sandstone as well as foreign fossils when he was in Tucson. Both Mr. Nibourg and Mr. Nernberg continue to dream. "This is only phase one" Mr. Nibourg says of the Big Valley Museum. He has designed the building so that expansion will be feasible. The electrical work is done in such a way that any area can be fully computerized for interactive displays. Speakers, tours, and visits to fossil beds could be part of their future program. Mr. Nernberg, for his part, also sees Grand Prairie as another location which would be ideal for a museum. Meanwhile, we look forward to the grand opening of the Big Valley Creation Science Museum in early 2005.

Meanwhile Mr. Nernberg plans

dinosaur exhibit. A large ammonite model over five feet long will be part of an underwater seascape. A full-size model of a coelacanth (the fish that was claimed to be a "missing link" by evolutionists) will be part of the living fossils exhibit.

Model of an ammonite, extinct relative of squid, octopus and nautilus. Creation Science Dialogue / OCTOBER 2004 / 4

n the American southwest, some particularly unique and dramatic landscapes have been preserved in the national parks. No one can fail to be impressed by the steep V-shaped gorge and the diagonal patterning (between horizontal erosion surfaces) which characterizes the rocks of Zion National Park in Utah. Similar sandstone rocks extend over a seven-state area, but they are not all called by the same name. In various parts of their range, these rocks are known either as Navajo, or Aztec, or Nugget Sandstone. The interesting point is that these sandstone rocks extend over a tremendous area, variously estimated from 265,000 up to 660,000 square kilometres (Rahl et al. 2003. Geology 31#9 p. 761). In additional these deposits are very thick, up to 700 m (2200 ft) at Zion National Park and at lesser depths elsewhere. The total volume of these rocks is extremely large, perhaps as much as 10,000 cubic miles or 40,000 cubic kilometres. Concerning this stupendous extent of rock, some geologists call it "one of the largest sand seas known in Earth history." (Loope and Rowe. 2003. Journal of Geology 111 p. 230). Obviously there is nothing ordinary about the Navajo Sandstone.

Naturally the first question many people ask is how this

rock came to be laid down in its present location and form. The traditional explanation has always been that the diagonal layering (cross-bedding) is the result of wind action. The idea is that wind skimmed off the top of the sand dunes and deposited further dunes on top. Thus up, up, up the layers of sand were piled, with conspicuous erosion planes (flat cut-off surfaces) between the layers. This interpretation involving wind action, continues to be promoted, as in the Loope and Rowe article just cited above. Their focus is trackways and trampling on some buried rock surfaces. The Navajo Sandstone, as a whole, has hardly any traces of plant or animal life, but there are a few sites of interest with some reptile footprints. The authors conclude that the areas with traces of life were actually wet at the time the organisms left their marks on the sand. These speculations involve an "ecological/ depositional system without modern analog" which would have developed under "unknown environmental conditions." (p. 231) It is interesting that the authors have such difficulty explaining their observations. Perhaps there is a problem with their interpretive framework of wind deposited dunes.

The significance of the Loope and Rowe paper however pales into insignificance compared to the other article in 2003 to which we have referred. The full list of authors includes Rahl, Reiners, Campbell, Nicolescu and Allen. These scientists collected zircon crystals from two levels in the sandstone rock column, the higher of which was deposited almost 600 m (2000 ft) above the lower one. Thus these two collection sites, the one above the other, represent points near the top and bottom of the Navajo Sandstone rock layers. These crystals, formed originally in granite rock, represent an important source of the radioactive elements uranium and thorium. Made of zirconium silicate, these hard crystals are very useful for studies involving radioactive decay. As the original granite rocks erode, many zircon and other silicate crystals end up in sedimentary deposits such as sandstone. In these sedimentary rocks, the zircon crystals, with their radioactive impurities, are useful indicators of the source rocks from which these products of erosion came. This is why these geologists set out to study zircons in the Navajo Sandstone. They wanted to know how far the sand grains had traveled to their final resting place in Utah. To this end, the authors carried out two different analyses on the same zircon crystals. One analysis by itself might indicate a range of possible source sites, but two

Appalachia

bu Marga

tests should narrow the field of possibilities. What indeed happened was that the two analyses narrowed the field to one astonishing rock source.

The analyses which were carried out included the ratio of parent radioactive uranium to stable daughter element lead, and secondly the quantity of helium left in the crystals from such radioactive decay. These tests served to rule out the nearby Rocky Mountain area as a source of the eroded crystals. Imagine the surprise of the investigators when they found that the dual signatures in their crystals suggested that the Appalachian Mountains on the northeast coast of North America, were the likely source of the sediments.

As a result of their analysis, the authors conclude that about two thirds of the Navajo Sandstone came from the east coast, perhaps as far north as Nova Scotia in Canada and as far south as the Carolinas. Two thirds of 40,000 cubic kilometers is 26,000 cubic kilometers of sediment. That is a lot of sand! Obviously the question arises as to how all this sediment came to the American southwest, thousands of kilometres away. In response, the authors declare that there was a sediment-dispersal system "fundamentally different from the modern one." (p. 763) No kidding!

<u>0 d y s s e y</u>

This scientific team suggests that there were a number of Amazon size rivers which carried the products of erosion westward. Later, they suggest, wind moved the deposits south into their final resting site. The cross-bedding pattern in the rocks shows us that the sand was spread by an energetic process. Wind generated sand dunes however do not work as an explanation. The wind does not shear off the top part of the dune, thus depositing a new layer above the old one. (This had to happen if a cross-bedding pattern was to be produced.) Sand dunes move en masse. Alternatively, sand waves, generated under extremely energetic water currents, do provide a reasonable explanation for our observations of cross-bedding.

Studies conducted in highly energetic water currents such as San Francisco Bay, and in laboratory simulations (with flumes), indicate that sand waves can withstand horizontal sheering and deposition of another layer on top. A typical cross-bedding pattern is generated when deep sediment laden water moves, throughout its depth (not just on the surface), at 1 m or more per second. Calculations based on laboratory generated data suggest that a typical cross-bedded layer (about 5 m wide) in the Navajo Sandstone, was originally deposited as a 10 m high (33 ft)

next, which left a similar 5 m cross-bedded layer. To drop such deposits, the water had to be about 54 m (180 ft) deep and moving at 1.5 m/second (3-5 ft/second). The inclined beds suggest that this huge body of water moved from the north east toward the southwest. (For discussion of sandwaves, see Steven Austin. ed. 1994 *Grand Canyon: Monument to Catastrophe.* pp. 33-35 and Nick Eyles. 2002. *Ontario Rocks: Three Billion Years of Environmental Change.* pp. 50-53.)

top part of the initial sandwave

was then sheered away by the

Who needs several Amazonsize rivers when one gigantic flood is able not only to erode the sediments from the Appalachian Mountains (formed early in the flood), but also to move these sediments briskly westward and finally, to deposit them as sand waves over an extensive part of the American southwest. Such a uniform deposit had to be laid down from one huge body of water. Neither lake systems nor rivers yield so uniform a deposit.

Such current studies serve to emphasize the scale of devastation in the past. They do not paint a pretty picture of past events, but they do encourage us to reflect on the situation which lead to this terrible cataclysm. It is enough to make us count our blessings that we live now, and not then.

sandwave. The

ret Helder

manipulation of an

acquiescent media and intellectual community in the United States both in the past and also

reviewed by Margaret Helder also today. Later the author considers specific

THE

CASE

ORA

LEE STROBEL

problems with Darwinism. At this time she introduces arguments for irreducible complexity and the Cambrian explosion. Her point is not to ask whether evolution has occurred, but to query whether Darwinism is the best explanation for it.

Unlike many treatments of intelligent design, Ms. O'Leary devotes a whole section of her book to the young earth creation model (YEC). There is no doubt that the author did her homework. For example, in a box on p. 160,

she presents a list of major creationist organizations complete with web sites and distinguishing details. She reviews the history of this intellectual movement and she shows that many myths about YECs are, in fact, wrong.

Nevertheless the author finds herself unsympathetic to the YEC position on two counts. Firstly she declares that YEC is at odds with "most current science findings" (p. 130 and 131). Thus she declares "A science that cannot accommodate evolution denies evidence that most scientists are convinced is both real and vital." (p. 162) Since the author supports a critical re-examination of Darwinism (which most scientists think is real and vital), we might have hoped that she would critically evaluate other "findings" or interpretations of science, but apparently not.

The other problem with the YEC position according to Ms. O'Leary, is an insistence on a literal understanding of Genesis chapters 1 and 2. Thus, she declares, the YECs explain evil and death based on their reading of Scripture, as opposed to others who look to a "more nuanced and complex" explanation (p. 142) As a result, the author declares, the YEC interpretations of nature function "as an answer to a problem that the YECs have created for themselves. ... the problem of taking Genesis 1 and 2 literally." (p. 240) That view is her choice, but not of course everyone's.

Lastly in her book the author

looks at the future of design theory and considers who will be advocates in the future. Will they be more secular and less Christian? Some advocates hope so. Only the future will tell. The author herself does her best to remain neutral. She even prints a disclaimer in her preface: "The design may not be real. The designer may not be God. The reader must judge " (p. xi)

Obviously the intention of the author is to encourage the reader to make up his/her own mind.

Another new book in this genre is Lee Strobel's *The Case for a Creator.* Formerly an atheist with a wild youth, this author sets out to discover the message of science. Does it connect in any way with the Christian gospel? The author follows the basic format of another

SCIENCE A THE JOURNALI Several

journalists have turned their attention to science in recent years. While such writers generally manage to make the text interesting, it is important to remember that like everyone else, the journalist starts with a point of view. The finished product is very much determined by the author's objectives in undertaking the project in the first place.

Consider the new book *By* Design or by Chance? written by Denyse O'Leary of Toronto. As a Christian, she was very concerned about the implications of meaninglessness which she perceived in Darwinian evolution. She therefore determined to research intelligent design interpretations of nature since intelligence presupposes meaning. The result is a hard hitting, thoroughly documented work written in a journalistic style. It features definitions, time lines and boxes of information which crystallize issues in a way that is readily absorbed and understood.

Ms. O'Leary addresses the question whether all that we see is the result of an intelligent designer, or is it the result of mindless chance. She thus considers Darwin and his materialist agenda, and various scientific topics connected with Darwin's proposed mechanism for evolution. Next the author discusses in detail the 1925 Scopes trial in Tennessee. The important issue she says was not what John Scopes did or did not teach, but the role that Darwinism was to play in society. The Scopes trial was all about propaganda and

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journalist, John Horgan in his 1996 book *The End of Science*. Like Horgan, the author describes the setting as an individual is interviewed. The author quotes extensively from each expert and this forms the

bulk of the book. It is Mr. Strobel's function to determine the sequence of featured individuals and the questions that they answer.

By his own account, Mr. Strobel was not interested in "internal Christian debates." (p. 94) Read this to mean he intended to ignore creation based explanations. What he wanted to discover, he said, was "how do scientific models and theories explain the origin of all?" Indeed, he insisted "I wanted the hard facts of mathematics, the cold data of cosmology, and only the most reasonable inferences that



can be drawn from them." (p. 95) This sounds all very well until we realize that specific mathematical equations do not necessarily apply to origins, and there are few solid facts in cosmology, just plenty of speculation and competing explanations.

Evidently the author retained a touching faith in secular explanations. Nevertheless he did interview individuals who were critical of some establishment views, specifically of Darwinian explanations for evolution. In other words, while Mr. Strobel interviewed intelligent design apologists, he clearly manifested disdain for young earth scientists. Thus he declared of his interviewees: "These were not narrow-minded fundamentalists, backwoods West Virginian protesters, or rabid religious

fanatics – just respected world class scientists." (P. 32) In a final *coup de grace*, the author equated YECs with "know-nothing pastors who objected to evolution on the grounds that it contradicted the Bible's claims." (p. 32) We have heard it all before, of course, just not perhaps in a book so widely promoted in Christian circles.

The author thus interviewed philosophers of science, astronomer/cosmologists and a biologist and biochemist. Some of the discussion is interesting and relevant, especially that of Stephen Meyer and Jonathan Wells. Author Strobel contends that the evidence points to the Creator. That may be, but a more critical consideration of some topics would have been appropriate and more enlightening.

Denyse O'Leary. 2004. *By Design or by Chance?* Castle Quay Books. Kitchener, ON. 337 pages.

Lee Strobel. 2004. *The Case* for a Creator. Zondervan. Grand

NIFTY NOSES - Continued from page 2

that people smell very well with far fewer kinds of receptor than animals require. The reason people are able to do this, apparently, lies in the much more sophisticated interpretive capability of human brain. For any individual odour, the brain calculates how many different kinds of receptor are stimulated and what is the relative proportion of these stimulated receptors. Scientists have also recently discovered that smell perception involves many more areas of the brain than previously thought.

While humans possess fewer genes for smell, and thus fewer receptor molecules, they nevertheless smell extremely well, as well or better than animals with far more genes. It is evident that scientists who try to draw conclusions about organisms based on comparisons of their chemical components, may be in for a surprise. Dr. Shepherd therefore remarks: "The mystery being addressed here is a caution against any belief that behavior can be related directly to genomes, proteomes, or any other type of 'ome."" (p. 575) [The genome is the genetic information in the DNA, and proteome is the complete list of proteins in an organism.] None of these measures adequately determines what an organism is like and its capabilities are. There is far more to the wonderful design of our bodies than we can even understand. Now that we realize how complicated the design of the odour detection system in our bodies really is, we will be doubly thankful for the wonderful gift of smell.



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