

Science News Digest - Monday 7<sup>th</sup> September 2009



The Centre for Life produces a weekly email digest of the latest science news. To receive a copy please email [sciencenews@life.org.uk](mailto:sciencenews@life.org.uk)

Monday 31<sup>st</sup> August

### British plan to tackle asteroids



BBC

A team of British scientists and engineers is developing plans for a spacecraft that could stop large asteroids from hitting the Earth.

The 10-tonne "gravity tractor" would deflect any orbiting rocks years before any potential collision could happen.

The device, which would rely on the force of gravity, is being developed by Stevenage space company EADS Astrium.

However, the idea is still in its early stages and the company says a prototype is some way off from being built.

<http://news.bbc.co.uk/1/hi/sci/tech/8230138.stm>

### Cervical cancer jab 'could prevent cancer in men'

The Guardian

Vaccines used to prevent cervical cancer in women might also protect men from cancer of the penis, researchers have said. A new study shows that half of penile cancers are linked to infection with the human papillomavirus (HPV), for which vaccines are already available.

In theory, eradicating high risk strains of HPV could prevent 7000 cases of penile cancer worldwide each year. However, cancer of the penis is rare, and one

expert says that vaccinating boys wouldn't be cost-effective unless vaccines became cheaper.

<http://www.guardian.co.uk/lifeandstyle/besttreatments/2009/aug/25/cervical-cancer-jab-could-prevent-cancer-in-men>

## Medical scans can give nuclear-plant radiation doses



New Scientist

X-RAYS and CT scans expose a minority of Americans to radiation levels comparable to working in a nuclear power plant. Are such scans worth it?

Reza Fazel of Emory University in Atlanta, Georgia, and colleagues looked at health insurance records for over 650,000 people who had at least one imaging procedure in a three-year period. Most received low doses of radiation, but around 2 per cent got doses equal to or above the suggested yearly exposure for someone working in a nuclear power plant. Fazel says further studies are needed to work out if such medical scans benefit or damage health overall.

<http://www.newscientist.com/article/mg20327234.100-medical-scans-can-give-nuclearplant-radiation-doses.html?DCMP=OTC-rss&nsref=online-news>

Tuesday 1<sup>st</sup> September

## Lobsters teach robots magnetic mapping trick



New Scientist

SPINY lobsters have become the unlikely inspiration for a robot with a unique sense of direction. Like the lobster, it uses a map of local variations in the Earth's magnetic field to find its way around - a method that could give domestic robots low-cost navigational capabilities.

In 2003, computer scientist Janne Haverinen read in *Nature* (vol 421, p 60) about the amazing direction-finding ability of the Caribbean spiny lobster *Panulirus argus*. A team from the University of North Carolina, Chapel Hill, had moved the critters up to 37 kilometres from where they were caught and deprived them of orientational cues, but found they always set off in the right direction home. They concluded *P. argus* must navigate with an inbuilt map of local anomalies in the Earth's magnetic field.

<http://www.newscientist.com/article/mg20327236.500-lobsters-teach-robots-magnetic-mapping-trick.html?DCMP=OTC-rss&nsref=online-news>

## H1N1 unlikely to mutate into 'superbug': U.S. study



Reuters

The new H1N1 virus appears to outcompete seasonal flu, making it less likely to mix with other circulating flu viruses into a "superbug" as some had feared, U.S. researchers said on Tuesday.

The H1N1, or swine flu, virus also spreads more quickly and causes more severe disease in animal studies, the team said, but it shows no signs of mixing with either of the two seasonal flu viruses to form a new, so-called reassortant virus.

<http://www.reuters.com/article/healthNews/idUSTRE58042220090901?feedType=RSS&feedName=healthNews>

## Scientists identify coldest place on earth

The Telegraph

The site, known simply as Ridge A, is nearly 14,000 metres high and is located deep within the Antarctic Plateau.

It has an average winter temperature of minus 94 degrees Fahrenheit (minus 70 degrees Celsius) and is so remote that it is thought that no human has ever set foot there. A team of American and Australian scientists identified Ridge A from satellite imagery and climate models during an exhaustive search for the best observatory site in the world.

The site is within the Australian Antarctic Territory, nearly 90 miles from an existing international robotic observatory.

<http://www.telegraph.co.uk/news/worldnews/antarctica/6121866/Scientists-identify-coldest-place-on-earth.html>

## Top science body calls for geoengineering 'plan B'



New Scientist

Take note: the back-up plan for saving the world is no joke. A major scientific institution has published a comprehensive review of possible ways to engineer the climate to reverse global warming.

The UK Royal Society's review of geoengineering will make it difficult for governments to ignore the issue. It says that while reducing emissions of greenhouse gases "absolutely" must remain a priority, there is a serious chance that this will not be enough to stave off global warming of 2 °C.

<http://www.newscientist.com/article/dn17716>

Wednesday 2<sup>nd</sup> September

## We're all mutants, say scientists



BBC

Each of us has at least 100 new mutations in our DNA, according to research published in the journal Current Biology.

Scientists have been trying to get an accurate estimate of the mutation rate for over 70 years.

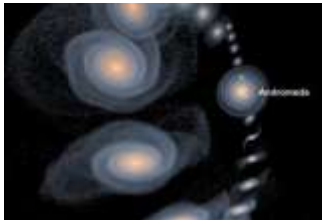
However, only now has it been possible to get a reliable estimate, thanks to "next generation" technology for genetic sequencing.

The findings may lead to new treatments and insights into our evolution.

In 1935, one of the founders of modern genetics, JBS Haldane, studied a group of men with the blood disease haemophilia. He speculated that there would be about 150 new mutations in each of us.

<http://news.bbc.co.uk/1/hi/sci/tech/8227442.stm>

## Cosmic cannibalising: Images show one galaxy engulfing another



The Independent

As cosmic events go, this one is hard to beat. Scientists have built up a dramatic time-lapse picture of one galaxy swallowing up another in a cannibalistic act that takes place over a period of three billion years – about as long as it took for slime-like earthlings to evolve into humans.

Astronomers have been able to witness a feature of galaxy evolution that they have long suspected but have been unable to visualise whereby one swirling mass of stars devours another that happens to have come within its gravitational sphere of influence.

A telescopic study of the Andromeda galaxy some 2.3 million light years away, the nearest spiral galaxy to our own Milky Way that can be seen with the naked eye, has exposed the galaxy's immense gravitational tides that are eating away at the smaller Triangulum galaxy as it slowly orbits its galactic master.

<http://www.independent.co.uk/news/science/cosmic-cannibalising-images-show-one-galaxy-engulfing-another-1780652.html>

## Nest-making frogs found in India



BBC

A scientist in India says he has found three rare species of frogs that make nests in which to lay their eggs.

Dr SD Biju of Delhi University says the frogs make nests after laying eggs to protect them from heat and predators.

The discovery was made in the rainforests of the Western Ghats mountain range in the southern Indian states of Kerala and Karnataka.

It comes after 20 years of intensive research carried out in Wayanad in Kerala and Coorg in Karnataka.

[http://news.bbc.co.uk/1/hi/world/south\\_asia/8233923.stm](http://news.bbc.co.uk/1/hi/world/south_asia/8233923.stm)

## Thursday 3<sup>rd</sup> September

### Discovery of HIV's weak spot boosts vaccine quest



New Scientist

The discovery of antibodies that bind to a hitherto unknown "weak spot" on HIV has revived hopes that a potent vaccine is within reach.

Now that the weak spot – common to many strains – has been discovered, researchers can aim for vaccines that trick people into making their own antibodies to target it.

<http://www.newscientist.com/article/dn17733-discovery-of-hivs-weak-spot-boosts-vaccine-quest.html?DCMP=OTC-rss&nsref=online-news>

### Rare baby lizards released in UK rescue mission



Reuters

Hundreds of rare baby sand lizards are being released into the British countryside as part of a national campaign to save endangered reptiles from extinction, a wildlife charity said on Thursday.

The Amphibian and Reptile Conservation Trust (ARC) said it will reintroduce nearly 400 of the green and brown reptiles, Britain's biggest and rarest lizard, to sites across England and Wales.

Once a common sight in parts of Britain, the shy creature has disappeared in some areas due to a devastating loss of its favored habitat: sand dunes or heathland.

<http://www.reuters.com/article/environmentNews/idUSTRE5822JE20090903?feedType=RSS&feedName=environmentNews>

## Men lose their minds speaking to pretty women



### The Telegraph

Talking to an attractive woman really can make a man lose his mind, according to a new study. The research shows men who spend even a few minutes in the company of an attractive woman perform less well in tests designed to measure brain function than those who chat to someone they do not find attractive.

Researchers who carried out the study, published in the Journal of Experimental and Social Psychology, think the reason may be that men use up so much of their brain function or 'cognitive resources' trying to impress beautiful women, they have little left for other tasks.

The findings have implications for the performance of men who flirt with women in the workplace, or even exam results in mixed-sex schools.

Women, however, were not affected by chatting to a handsome man.

<http://www.telegraph.co.uk/health/healthnews/6132718/Men-lose-their-minds-speaking-to-pretty-women.html>

## Three human genes evolved from junk

### New Scientist

AT LEAST three human genes evolved "from scratch" via mutations in non-coding stretches of DNA, a process thought to be virtually impossible until recently. The genes evolved since human and chimp lineages split and so are unique to us.

It is tempting to speculate that uniquely human genes drive uniquely human traits, says Aoife McLysaght of the Smurfit Institute of Genetics at Trinity College Dublin, who discovered the three genes with her colleague David Knowles. But that would be premature: "There is no clue about the function at all yet."

What is extraordinary about the genes is their evolutionary past. Most new genes arise when existing ones are duplicated and the copies slowly acquire different functions. The three new genes, called CLLU1, C22orf45 and DNAH10OS, suddenly sprang into existence as a result of mutations in DNA sequences that did not previously code for proteins.

<http://www.newscientist.com/article/mg20327244.100-three-human-genes-evolved-from-junk.html?DCMP=OTC-rss&nsref=online-news>

Friday 4<sup>th</sup> September

## Google trick tracks extinctions



BBC

Google's algorithm for ranking web pages can be adapted to determine which species are critical for sustaining ecosystems, say researchers.

According to a paper in PLoS Computational Biology, "PageRank" can be applied to the study of food webs.

These are the complex networks of who eats whom in an ecosystem.

The scientists say their version of PageRank could be a simple way of working out which extinctions would lead to ecosystem collapse.

Every species is embedded in a complex network of relationships with others. So a single extinction can cascade into the loss of seemingly unrelated species.

<http://news.bbc.co.uk/1/hi/sci/tech/8238462.stm>

## Hot on the trails of the mysterious monopole

New Scientist

We have moved one step closer to finding the mysterious monopole – a magnetic pole without its opposite, which has long eluded physicists. Two laboratory experiments using strange stuff called spin ice have provided the best evidence yet that monopoles really are out there.

Nearly 80 years ago, physicist Paul Dirac said it must be possible to separate the north and south poles of a magnet to give them a separate existence. But despite decades of searching moon dust, the debris from particle collisions and cosmic radiation for traces of a monopole, not one has been found.

<http://www.newscientist.com/article/dn17740-hot-on-the-trails-of-the-mysterious-monopole.html?DCMP=OTC-rss&nsref=online-news>

## Forget aspirin – big thighs could be key to beating heart disease



The Independent

Big thighs might confer a health benefit according to a study showing that people with small thighs run a higher-

than-average risk of developing heart disease and an early demise.

Scientists have found that men and women whose thighs are less than 60cm (23.6ins) in circumference are more likely to suffer from cardiovascular disease, and die prematurely, compared to people with thicker thighs.

They also found, however, that the apparent advantage of bigger thighs did not continue beyond the 60cm threshold. People with thighs much wider than 60cm did not fair any better than those whose thighs hovered just above the threshold.

<http://www.independent.co.uk/news/science/forget-aspirin-ndash-big-thighs-could-be-key-to-beating-heart-disease-1781468.html>

## Saturday 5<sup>th</sup> September

### Fairy tales have ancient origin



#### The Telegraph

Popular fairy tales and folk stories are more ancient than was previously thought, according research by biologists. They have been told as bedtime stories by generations of parents, but fairy tales such as Little Red Riding Hood may be even older than was previously thought.

A study by anthropologists has explored the origins of folk tales and traced the relationship between variants of the stories recounted by cultures around the world.

The researchers adopted techniques used by biologists to create the taxonomic tree of life, which shows how every species comes from a common ancestor.

Dr Jamie Tehrani, a cultural anthropologist at Durham University, studied 35 versions of Little Red Riding Hood from around the world.

Whilst the European version tells the story of a little girl who is tricked by a wolf masquerading as her grandmother, in the Chinese version a tiger replaces the wolf.

In Iran, where it would be considered odd for a young girl to roam alone, the story features a little boy.

Contrary to the view that the tale originated in France shortly before Charles Perrault produced the first written version in the 17th century, Dr Tehrani found that the variants shared a common ancestor dating back more than 2,600 years.

**He said: "Over time these folk tales have been subtly changed and have evolved just like an biological organism. Because many of them were not written down**

until much later, they have been misremembered or reinvented through hundreds of generations.

<http://www.telegraph.co.uk/science/science-news/6142964/Fairy-tales-have-ancient-origin.html>

## Sweet smelling sweat keeps mosquitoes at bay

The Telegraph

Scientists have discovered why some people are bitten less than others by mosquitoes and midges – their sweet-smelling sweat. It has been a puzzling fact that biting insects seem to prefer some people more than others, but the reason why has proved difficult to unravel.

Now scientists have discovered key differences in the body odours produced by people who are more prone to insect bites compared to those who seem resistant – they have lower levels of fruity smelling compounds in their sweat. The researchers found that these compounds, known as ketones, repel mosquitoes. People who produce high levels are less likely to be bitten.

They are now developing a new kind of insect repellent to help those whose bodies do not smell so fruity.

<http://www.telegraph.co.uk/science/science-news/6142961/Sweet-smelling-sweat-keeps-mosquitoes-at-bay.html>

## Los Angeles wildfire drives wildlife to backyards

Reuters

For residents of the scenic foothill communities above Los Angeles, chance encounters with deer, coyote and other wildlife are commonplace. The occasional bear or mountain lion will even wander into a backyard.

They're about to become more visible.

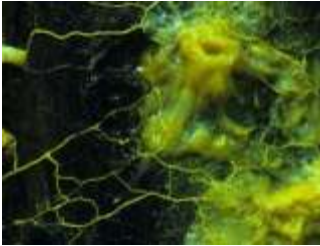
As the threat to humans from the 10-day-old Station Fire subsides, allowing displaced families to settle back into their homes, four-legged refugees are starting to emerge dazed, injured and hungry from the charred chaparral of the San Gabriel Mountains.

The Los Angeles County Public Health Department issued an advisory to residents on Friday warning them to "avoid wild animals that may have been displaced by the fires" and urging people not to feed them.

<http://www.reuters.com/article/environmentNews/idUSTRE58404120090905?feedType=RSS&feedName=environmentNews>

Sunday 6<sup>th</sup> September

## Plasmobot: the slime mould robot



New Scientist

THOUGH not famed for their intellect, single-celled organisms have already demonstrated a surprising degree of intelligence. Now a team at the University of the West of England (UWE) has secured £228,000 in funding to turn these organisms into engineering robots.

In recent years, single-celled organisms have been used to control six-legged robots, but Andrew Adamatzky at UWE wants to go one step further by making a complete "robot" out of a plasmodium slime mould, *Physarum polycephalum*, a commonly occurring mould that moves towards food sources such as bacteria and fungi, and shies away from light.

<http://www.newscientist.com/article/mg20327245.100-plasmobot-the-slime-mould-robot.html?DCMP=OTC-rss&nsref=online-news>

## Giant statues give up hat mystery



BBC

Archaeologists have solved an ancient mystery surrounding the famous Easter Island statues.

At 2,500 miles off the coast of Chile, the island is one of the world's most remote places inhabited by people.

Up to 1,000 years ago, the islanders started putting giant red hats on the statues.

The research team, from the University of Manchester and University College London, think the hats were rolled down from an ancient volcano.

Scientists pieced together a series of clues to discover how the statues got their red hats. An axe, a road, and an ancient volcano led to their findings.

Each hat, weighing several tonnes, was carved from volcanic rock. They were placed on the heads of the famous statues all around the coast of the island.

Precisely how and why the hats were attached is unknown.

<http://news.bbc.co.uk/1/hi/sci/tech/8236349.stm>

## Alzheimer's genes link uncovered



BBC

Two potentially key genes linked to the development of Alzheimer's disease have been uncovered by UK researchers.

It is the first gene clue to the condition in 16 years and has prompted scientists to rethink their theories on how the disease develops.

The genes were pinpointed in a study of 16,000 DNA samples and are known to be implicated in inflammation and cholesterol breakdown.

It is hoped the Nature Genetics study will open the way for new treatments.

<http://news.bbc.co.uk/1/hi/health/8237686.stm>

## And Finally....



Anjana the chimp shows off her parenting skills...with a puma cub

She has a tender heart, a nice hairy shoulder to cry on - and she knows where her zoo keeps the baby wipes.

So Anjana the chimpanzee is well qualified to be a kitten-sitter.

Since orphaned puma cub Sierra turned up at the zoo, Anjana has helped her human carers with all the feeding, cuddling and chasing duties.

She learned to care for little big cats while in the charge of resident feline curator China York.

Park director Dr Bhagavan Antle said: 'Chimpanzees are great learners and imitators so it wasn't long before she took on the right behaviours that were necessary to keep the kittens in line.

<http://www.dailymail.co.uk/news/worldnews/article-1210084/III-mummy-little-kitty-cat-Anjana-chimp-shows-parenting-skills-puma-cub.html?ITO=1490>