

## News in Brief

## Iran Builds

## DNA Extract Kit

Iranian researchers have built a kit to extract artemia DNA at Artemia and Aquatic Research Center at Orumiieh University, northwestern Iran.

The plan aims at extracting DNA from artemia and also makes it possible to get access to chemicals and DNA kits in Iran, ISNA reported.

The method with high speed and precision is one of the most economical ones compared to other methods of DNA extraction.

The DNA extract protocol and kit can be used in biological laboratories easily.



## Optical Glass Facade

The interiors are open, airy and uncluttered, with small objects hidden behind a floor-to-ceiling wooden cupboard that functions doubling as a dividing wall.

The Optical Glass House sits among tall buildings in downtown Hiroshima. Its glazed facade was hand-made from 6,000 high-transparency glass blocks that are from borosilicate, a raw material commonly used for optical glass, Inhabitat wrote.

The sunlight coming from the east refracts through the glass facade and through a super lightweight metal curtain and sliding doors.

Visible from all rooms, the garden offers inhabitants a serene space that is protected from the cars' noise and pollution.



## Omega-3 May Reduce

## Breast Cancer Risk

Researchers in China are claiming that eating fish could reduce the risk of breast cancer.

Analysis of almost 900,000 participants in 26 international studies has led the researchers to conclude that women who consume more omega-3 fatty acids from fish are 14 percent less likely to contract breast cancer compared to women who ate less, Shine.yahoo wrote.

Researchers tallied their data from both the amount of fish consumed by the participants and the levels of omega-3s in their blood.

The results showed that for each 0.1 gram increase in omega-3s consumed per day the risk of breast cancer was five percent lower.

Omega-3 fatty acids are a type of polyunsaturated fat that can be found in some plant products as well as in fish. The scientists say, however, that the omega-3s in plants do not have the same health benefits as those in fish.

While this interpretation shows new positive results, it is by no means the first to cover this topic. A 2009 review of 48 studies declared that it was not certain that consumption of omega-3s could influence the risk of developing cancers. It remains to be seen whether these new findings will prove to be the more accurate.



## Coffee Socks Keep Feet

## Cool, Smell-Free

Traditional dress socks are not always very gentle to the feet, with all the heat and sweat they keep in. But new technology can provide new levels of comfort that were not previously possible.

Ministry of Supply, makers of the Apollo Shirt, once again evokes ancient Greece to launch its latest sartorial innovation, Atlas, high-tech socks that come with a promise of cool and comfortable feet thanks in part to coffee, Gizmag wrote.

Atlas is made from a mix of cotton, recycled polyester and carbonized coffee, which filters and absorbs sweat and odor to keep feet cool. Carbonized coffee is MoS's weapon against odor, attracting molecules (composed mostly of carbon) with its spongy structure.

The molecules are eventually released when the socks are washed, ready for a whole new dose of foot odor.

The coffee is reclaimed from coffee roasters and shops, and then subjected to a pharmaceutical process to remove coffee oils and its distinctive smell (since that would not be everybody's cup of tea).

It is then infused into the company's recycled polyester yarns. Atlas has undergone lab tests that MoS claims showed it to be three times more effective at absorbing odors than regular cotton.

MoS says it has used "strain analysis", which visualizes in 3D how the skin stretches and adjusts, so that the sock doesn't have to bend and stretch to accommodate foot movements as conventional socks do.

The ministry also used pressure mapping to locate pressure points and add extra support, similar to technology used in custom orthotics. This technique was combined with thermal imaging to identify hot spots and improve ventilation.

Manufacturing will be outsourced to specialist textile mills that use techniques such as robotic knitting, which MoS says is like 3D printing but for knitwear.

The Kickstarter campaign has passed its goal (three times over). In order to get a couple of pairs, the lowest pledge is \$28 plus \$20 for international shipping.



## Computer Mouse Inventor Dies

Douglas C. Engelbart, a computer visionary credited with inventing the now-ubiquitous computer mouse, has died in California, his family said.

The Computer History Museum in Mountain View, Calif., confirmed the death of Engelbart, who died at his home in Atherton, Calif., UPI wrote.

His wife, Karen O'Leary Engelbart, said Engelbart, 88, died of kidney failure.

In the early days of computers when machines took up entire rooms and ran programs off punch cards, Engelbart led a team of researchers determined to make computers easier to use and friendlier, turning them into a staple of work and home life.

In 2000, he received the National Medal of Technology, the nation's highest award in that field. "More than any other person," the citation read, "he created the personal computing component of the computer revolution."

Engelbart began work on his concept of the computer mouse in 1964, looking for a way to interact with a computer's display.

He had served in the Navy during World War II as a radar operator and recalled using a light pen, a kind of stylus fitted with a photocell to control a cathode-ray tube, the technology that powered radar systems and early televisions.

Engelbart said he believed a similar setup could work for the computer monitor.



## 3-D Touchscreen Touches Back

Most of us have kicked the CRT television to the curb in favor of a nice flat LCD screen.

Well, you might be kicking that one to the curb next, if Microsoft Research can make this haptic touchscreen a reality, Discovery News said.

It has technology embedded behind an LCD flat panel screen to simulate the shape and weight of objects on the display. The device could be used for medical imaging as well as gaming.

Senior researcher Michael Pabud and his colleagues designed the LCD panel by embedding force sensors and a robotic arm that help control how much resistance the screen gives when a user presses his finger against it.

A computer program adjusts the size and perspective of graphics to give a 3-D effect, and a different amount of force feedback is assigned to different objects. For example, a stone is more difficult to push off a ledge than a sponge.

The program also adjusts the contours of the virtual object, so that if a person drags his finger over a ball, it will feel round.

Microsoft created a demonstration pairing the 3-D tactile screen with images from magnetic resonance imaging (MRI) scans of a brain. The team wanted to show how a doctor could navigate the images by pushing their finger against the display. It would be possible to draw notes on the 3-D display.



## Manganese Nano Oxides Show Self-Repair Properties

Iranian researchers from the Institute for Advanced Studies in Basic Sciences, Zanjan, have discovered new self-repair properties in manganese nano oxides during a study on the stability of these materials in media containing oxidants.

Manganese oxides were used to be known as unstable materials in oxidative environments. However, manganese nano oxides can be used as catalyst in water oxidation reaction to produce hydrogen as green fuel, Iran Nanotechnology Initiative Council reported.

The self-repair properties of these particles lower the cost of green fuel production.

Dr. Mohammad Mehdi Najafpour, a member of the Scientific Board of Institute for Advanced Studies in Basic Sciences, elaborated on the research.

"In order to obtain a catalyst with self-repair properties, we chose a type of manganese oxide that has a very reasonable price and is synthesized very easily.

These materials lose their active sites after a while," he said.

The catalyst with the ability to oxidize water used in this research is able to repair a part of its structure in case it is damaged.

Both characteristics, that is water oxidation and self-repair, can be observed when the particles are at nanometric scales. Otherwise, these characteristics do not happen at the same time or take place too slowly.

The mechanism proposed by this research team suggests that manganese ions leave the surface of the oxides and enter the solution. They turn into permanent due to the presence of oxidants. Then, ions react with manganese oxide once again after the consumption of oxidants and they turn into manganese oxide again.

Results of the research have been submitted in the New Journal of Chemistry, and will be published soon.



## Why Deaf People Don't Say Achoo

An online magazine for the deaf community, Limping Chicken, recently ran an item on how deaf and hearing people sneeze differently.

According to BBC, the article by partially deaf journalist Charlie Swinbourne got readers talking--and the cogs started turning at Ouch.

Swinbourne observes that deaf people don't make the 'achoo!' sound when they sneeze, while hearing people seem to do it all the time--in fact, he put it in his humorous list, The Top 10 Annoying Habits of Hearing People.

Nor is 'achoo' universal--it's what English-speaking sneezers say. The French sneeze 'atouchou'. In Japan, it's



'hakashun' and in the Philippines, they say 'ha-ching'.

Inserting words into sneezes--and our responses such as "bless you"--are cultural habits we pick up along the way. So

it's not surprising that British deaf people, particularly users of sign language, don't think to add the English word 'achoo' to this most natural of actions.

For deaf people, "a sneeze is what it should be...something that just happens", says Swinbourne in his article.

He even attempts to describe what an achoo-free deaf sneeze sounds like: "[There is] a heavy breath as the deep pre-sneeze breath is taken, then a sharper, faster sound of air being released."

Very little deaf-sneeze research exists, but a study has been done on deaf people and their laughter.

So do deaf laughs sound different to hearing ones? In a paper called Laughter

Among Deaf Signers, the deaf guffaw or titter is described as "obvious and easily identified" but "more varied than the typical laughter of hearing people".

Speaking to Ouch, Prof. Bencie Woll, director of the Deafness Cognition and Language Research Center at University College London, calls actions like these "vegetative sounds". She says we can modify the noise, but we can't stop it.

"When we laugh, we are not trying to go 'ha ha'. That's just the sound that comes out as a result of the changes we make in our throat.

The influence we have over our sneezing and laughter allows us to stifle them or put more power behind them, depending on what feels socially appropriate," she said.

## Starfish Vision Study Eye-Opener

Starfish use the light-sensitive organs at the tips of their arms to form images, helping the animals find their way home if they stray from the reef.

According to NewScientist, we have known about the sensors that starfish have at the ends of their arms for 200 years, but no one knew whether they are real eyes that form images or simply structures that detect changes in light intensity.

We finally have an answer: they appear to act as real eyes. The discovery is another blow to creationist arguments that something as complex as a human eye could never evolve from simpler structures.

The blue sea star (Linckia laevigata), which is widely sold as dried souvenirs, lives on shallow rock reefs in the Indian and Pacific oceans. It can detect light, preferring to come out at night to graze on algae.

The light sensitivity has recently been found to be due to pigments called opsins, expressed in cells close to the animal's nerve net.

"What has not been clear," says Anders Garm at the University of Copenhagen in Denmark, "is whether these cells simply tell the starfish about ambient light levels,

as happens in more primitive light-sensitive animals, or whether they actually form spatial images."

To find out, Garm collected healthy starfish and removed the arm-tip photoreceptors from a third of them. He made similar incisions on another third of the starfish but left the eyes intact, for a control 'sham' operation.

The remaining starfish were left untouched. He then took the starfish off their rocks, and put them on the sandy bottom--where they would starve if they didn't get back to the reef.

Homeward Bound Garm told the Society for Experimental Biology meeting in Valencia, Spain, this week that intact starfish promptly scuttled back to the rocks.

Eyeless starfish scuttled just as fast, but in random directions--demonstrating that the starfish needed the photoreceptors to recognize and move towards the reef.

To do this, Garm says, they had to be able to form an image of the reef, meaning that their simple nerve net must be able to process visual information.

"Amazingly, image vision in starfish has not been in-



vestigated before," says Dan-Eric Nilsson at Lund University in Sweden, who collaborated with Garm on the study.

In evolutionary terms, says Garm, it is interesting because starfish eyes are structurally close in form to the hypothesized first image-forming eyes.