Hello Nature readers,

naturebriefing

Friday 3 March 2017

Your weekly update from Nature's global news team.



Two physicists announced yesterday that they had crushed hydrogen under such immense pressures that the gas became a shiny metal. In theory, metallic hydrogen could conduct electricity without resistance at

been a dream for physicists ever since 1935, when theorists first predicted its existence. But the field of high-pressure research has a long

convinced by the latest report.

First look at LSD in action

room temperature - so it's a material well worth chasing. And making has

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history of failed attempts, and other researchers say they're far from

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What mirrors tell us about animal minds

tests of self-awareness and self-recognition.

Atlantic | 12 min read

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African VHF

Nature | 10 min read

Nature | 12 min read

Cultivate the muse

Read advice and tips in Nature.

at Nature Toolbox.

Materials and methods

Are eagles intelligent enough to recognize their own reflections? We

have no earthly idea. To paraphrase Frans de Waal, we're not quite

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smart enough to know how smart animals are, and we need better

Nature Podcast

What are the pros and pitfalls of predicting

Predictive policing

crimes?

Comment: Reform predictive policing Jeffrey Brantingham INFOGRAPHIC OF THE WEEK

Funding for Ebola research shot up in response to the West Africa

outbreak, but money for other neglected diseases continues to fall.

■ Ebola and other
Other
Malaria
Tuberculosis
HIV/AIDS

Neglected-disease funding (US\$ billions) 2007 2008 2009 2010 2011 2012 2013 2014 2015 VHF, Viral haemorrhagic fevers **LAB LIFE**

Creative writing can enrich scientists' research, say authors

Benford. "Fiction writing has helped me reconnect with my

including neuroscientist David Eagleman and astrophysicist Gregory

community and find renewed purpose for my scientific research as

well," adds computational biologist Gaia Bistulfi. But how to start?

Code alert: Programming tools can speed up and strengthen

daunting. Read our guide for beginners, or check out specific

features on <u>programming in R</u> and in Python, published earlier

analyses, but mastering the skills takes time and can be

Nature | 12 min read Share > **IMAGE OF THE WEEK THAW exhibition** Scientists from the Scott Polar Research Institute at the University of Cambridge, UK, on the Greenland ice. This image is from

science and archaeology. Nature | 2 min read

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Ebola funding up; neglected-diseases funding down

onature The Turkish paradox: Can scientists thrive in a state of emergency? Faced with rising rates of terrorism, concerns about President Erdoğan's increasing authoritarianism and a currency in free fall, many of Turkey's best scientists are wondering whether they should leave the country. Share ><

photographer Timo Lieber's THAW exhibition, which opens this month in London. Nature | 12 min read Share F

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Elizabeth Gibney enjoys a show at

London's Geological Society that

achievements of women in Earth

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brings to life the blazing

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Seasoned space writer Rod Pyle returns to orbit with this cavalcade of oddball missions, many only recently declassified. We learn how the Nazis planned to reduce Manhattan to radioactive rubble with Silbervogel — a huge rocket bomber that never materialized, yet spawned key spaceflight technologies. And in 1952, rocket scientist Wernher von Braun devised an inflatable solar-powered space station. Read more books in brief The last word Why Obama just wrote articles in 3 academic journals Bloomberg

Rod Pyle Prometheus (2017)

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Researchers have finally mapped the 3D structure of LSD in its active state, and the details indicate the key to the chemical's potency. LSD binds to a receptor for the neurotransmitter serotonin, which helps regulate appetite and mood; the receptor includes a lid-shaped structure that closes when the drug binds, trapping the LSD molecule inside, and perhaps explaining its long-lasting effects. Nature | 12 min read (Cell <u>research papers)</u> Share F US science advisers outline path to genetically modified babies Scientists should be permitted to genetically modify human embryos destined for implantation in the womb to eliminate devastating genetic diseases such as sickle-cell anaemia or cystic fibrosis — once geneediting techniques advance sufficiently for use in people and proper restrictions are in place. That's the conclusion of a long-awaited 14 February report from the US National Academies of Science, Engineering, and Medicine. Nature | 12 min read Share > NAS report Agricultural espionage A Chinese scientist has been convicted in the United States of trying to steal samples of genetically engineered rice. Weigiang Zhang worked as a rice breeder for Ventria Bioscience in Kansas and was found to have stolen hundreds of engineered rice seeds from the company's research facility. It not the first time China has been linked to 'agricultural theft': last year, a Chinese national was jailed for three years for stealing specially bred corn seeds. Nature | 12 min read Share X NAS report Breakthroughs you may have missed A computer can now identify certain cancers as successfully as can skin-cancer doctors (Nature paper). But what are the implications for the future of medical diagnosis? Nature | 12 min read (science <u>research papers</u>) Share > **COMMENT & ANAYLSIS** US Republican idea for tax on carbon makes climate sense A group of senior US Republicans has proposed an entirely sensible climate policy: put a substantial and steadily rising tax on carbon, and then send the proceeds back to citizens to offset the economic pain of higher energy prices. Nature | 12 min read (science <u>research papers</u>) Share T Winston Churchill's essay on alien life found A newly unearthed essay by Winston Churchill, "Are we alone in the Universe?", reveals that he reasoned like a scientist about the likelihood of alien life. "At a time when a number of today's politicians shun science, I find it moving to recall a leader who engaged with it so profoundly," writes astrophysicist Mario Livio, the first scientist to analyse the article. Nature | 12 min read

Broad Institute wins bitter battle over CRISPR patents The Broad Institute has been allowed to keep its patents to the potentially lucrative gene-editing technology CRISPR-Cas9. That's a blow to the University of California, Berkeley, which had filed its own claims on the technique and hoped to have the Broad's patents thrown out. But the bitter patent battle isn't over - read why in Nature. Nature | 12 min read Share Doubts cloud claims to make metallic hydrogen