

RESEARCH

Genome decoded

The Encyclopedia of DNA Elements (ENCODE) consortium this week publishes the fruits of its endeavour to understand how human cells use the genomic code. Across 30 papers published in *Nature* (see page 45), *Genome Research* and *Genome Biology*, the team reveals that more than 80% of the human genome's components have now been assigned at least one biochemical function. See nature.com/encode for more.

Resistance warning

More than 40% of multidrug-resistant (MDR) tuberculosis infections are also resistant to some of the common second-line backup drugs, according to research published on 29 August (T. Dalton *et al. Lancet* <http://doi.org/h8r>; 2012). MDR strains are not routinely screened for resistance to second-line drugs in the poor countries where the incidence of tuberculosis is highest. Out of 1,278 people with MDR tuberculosis, 6.7% could be classified as having extensively drug-resistant tuberculosis — almost untreatable strains that are resistant to several common backup drugs. See go.nature.com/dklimh for more.

Virus discovery

A new type of phlebovirus causing fever, severe fatigue and nausea has been identified in a paper published on 30 August (L. K. McMullan *et al. N. Engl. J. Med.* **367**, 834–841; 2012). Found in Missouri, it is the first virus pathogenic to humans to be discovered in the United States since hantavirus in 1993. Dubbed the Heartland virus, the phlebovirus is probably spread by the lone star tick



J. FREUND/NATUREPL.COM

One in five invertebrates face extinction

The first comprehensive effort to review the conservation status of the world's invertebrates shows that about one-fifth of species are at risk of extinction, according to a report from the Zoological Society of London. Such creatures are thought to represent around

99% of the biodiversity on Earth. The report suggests that the greatest threat is to freshwater invertebrates, followed by terrestrial and marine invertebrates, such as nudibranch sea slugs (*Hypselodoris kaname*, pictured). See go.nature.com/r2uf2y for more.

(*Amblyomma americanum*) and is distantly related to a tick-borne and potentially lethal phlebovirus discovered in China last year. The two Missouri men infected with the virus recovered, however.

BUSINESS

Drug hope dashed

Prospects for a new class of drug to treat schizophrenia were scotched on 29 August, when pharmaceutical giant Eli Lilly halted the late-phase clinical trial of its drug pomaglumetad methionil, also known as mGlu2/3, which modifies glutamate neurotransmission in the brain. The company, based in Indianapolis, Indiana, said the drug seemed to be ineffective. Current schizophrenia drugs work primarily by reducing

levels of the neurotransmitter dopamine in the brain, but they do not control all symptoms of the illness.

Late apology

Pharmaceutical company Grünenthal, based in Aachen, Germany, has apologized for the first time for the effects of the drug thalidomide. The firm developed the drug, which was used to treat morning sickness in pregnant women between 1957 and 1961. Thalidomide was withdrawn after causing birth defects in thousands of babies.

FUNDING

ArXiv boost

The arXiv preprint server at Cornell University Library in Ithaca, New York, is to get up to US\$350,000 a year for the

next five years from the Simons Foundation, a charity based in New York that supports basic research. The sum includes an unconditional annual grant of \$50,000, with the remainder depending on matching funds from arXiv's other donors, the library said on 28 August. The foundation was set up in 1994 by mathematician and hedge-fund manager James Simons and his wife, Marilyn. See go.nature.com/xfapfr for more.

POLICY

Carbon trade grows

Australia announced on 28 August that it is to join the European Union (EU) Emissions Trading System, marking the first time that a non-European country has linked up with the greenhouse-gas-reduction

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strategy. Australian firms will be able to cover up to 50% of their carbon emissions by purchasing carbon permits issued to European companies from 2015. EU companies will be able to buy Australian permits from 2018.

Forest code final

Brazil's controversial forest-protection law reached what is likely to be its final form on 29 August, after a congressional committee made further changes to the version proposed by President Dilma Rousseff in May. The text further reduces protection for forests abutting rivers, for example. See go.nature.com/34qwnl for more.

Embryo ruling

The European Court of Human Rights ruled on 28 August in favour of an Italian couple who want to be able to screen their *in vitro* fertilized embryos for a disease-causing gene before implantation. A 2004 Italian law currently bans preimplantation genetic diagnosis. The couple both carry mutations that cause cystic fibrosis, and their first daughter has the disease.

Wolves delisted

The US Fish and Wildlife Service has removed grey wolves from the endangered-species list for Wyoming, the last state in which hunting

of the animals was regulated by the federal government (see go.nature.com/4zmmic). Wolves will be managed by the state from 30 September, which will probably mean that wolves can be shot on sight outside protected areas such as Yellowstone National Park. Environmental groups have promised legal action to reverse the move.

PEOPLE

Misconduct verdict

Shane Mayack, a former postdoctoral researcher at the Joslin Diabetes Center, an affiliate of Harvard Medical School in Boston, Massachusetts, duplicated figures in two stem-cell papers and poached figures from other sources, an official investigation by the US Office of Research Integrity has concluded. The papers (S. R. Mayack *et al. Nature* 463, 495–500; 2010, and S. R. Mayack and A. J. Wagers *Blood* 112, 519–531; 2008), had already been retracted by co-author Amy Wagers, a stem-cell biologist at Joslin and Mayack's mentor. See go.nature.com/jzdtny for more.

Biosecurity leader

Samuel Stanley, president of Stony Brook University in New York, will serve as chair of the US National Science Advisory Board for



Biosecurity. The board has been enmeshed in controversy for recommending in December 2011 that two research papers on highly pathogenic avian influenza H5N1 be redacted for safety and security reasons, before finally voting in favour of full publication in March this year. Stanley (pictured) replaces acting chair Paul Keim, a microbiologist at Northern Arizona University in Flagstaff. All current board members are to be replaced.

EVENTS

Student sit-in

Students from Nile University in Giza, Egypt, last week forced their way into the Zewail City of Science and Technology on the outskirts of Cairo. They were protesting about the university no longer having access to buildings on the Cairo site. The university had built on land given to it by former-president Hosni Mubarak's government, but

COMING UP

6–8 SEPTEMBER

The progress of projects to chart the epigenome will be reviewed at the International Human Epigenome Consortium's second meeting in Seoul, South Korea. go.nature.com/zncst

10 SEPTEMBER

The Balzan prizes are announced in Milan, Italy. This year sees two awards set aside for the sciences: for epigenetics and solid-Earth sciences (each worth US\$787,000). go.nature.com/wfww6q

that gift was rescinded after the January 2011 revolution and the land given to the Zewail City. Nobel laureate Ahmed Zewail, a chemist at the California Institute of Technology in Pasadena, is leading the negotiations with Nile University to try to settle the dispute. See go.nature.com/juxrba for more.

Virus puzzles

An outbreak of hantavirus originating in California's Yosemite National Park has so far affected at least six people, two of whom have died, the National Park Service (NPS) announced on 31 August. The NPS has tried to contact around 1,700 people who stayed in cabins at one of the park villages between mid-June and mid-August. The virus is spread by rodent droppings, and this outbreak has puzzled medical researchers as the rare previous cases originated from a single cabin on each occasion. But this time, the infected visitors had stayed in different cabins. See go.nature.com/v86lxo for more.

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TREND WATCH

US President Barack Obama has signed new rules requiring car and truck manufacturers to almost double average fuel efficiency by 2025. First announced a year ago, the standards approved on 28 August would see US cars reach the current efficiency of Japanese cars by the mid-2020s (see chart). They would also bring emissions down to around 107 grams of carbon dioxide per kilometre travelled (behind the target of 95 g CO₂ per km set by the European Commission for 2020).

CRACKING DOWN ON GAS GUZZLERS

Finalized US vehicle standards would almost double fuel efficiency by 2025 — but would still lag behind other nations.

