

CONTENTS

8 September 2011 / Vol 477 / Issue No 7363

THIS WEEK

EDITORIALS

131 TURKEY

A very Turkish coup

The government's bid to curb academic independence should not be tolerated

131 CLIMATOLOGY

Heavy weather

Efforts to test the effects of global warming on weather deserve support

132 MENTAL HEALTH

Brain burdens

Europe's mental health requires action

WORLD VIEW

133 Embrace failure to start up success

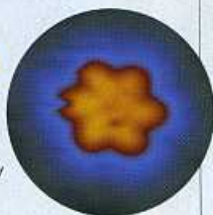
Steve Blank

Scientists have a strong pedigree as entrepreneurs

RESEARCH HIGHLIGHTS

134 SELECTIONS FROM THE SCIENTIFIC LITERATURE

Lysosomal disorders / A molecular electric motor / Diet and gut flora / A long-lived plant / Sperm from stem cells / Human migration routes



SEVEN DAYS



136 THE NEWS IN BRIEF

Change of status for captive chimps? / Ned Kelly's body identified / Iran's first nuclear plant comes online / Wild poliovirus reappears in China / The growing problem of space debris

CAREERS

239 ACADEMIA

Small-school science

Liberal-arts colleges can combine research with their teaching remit

241 TURNING POINT

Sarah Schaack sees the attractions of ecology, molecular biology and teaching

NATUREJOBS ADVERTISING FEATURE

Spotlight on Austria

NEWS IN FOCUS

NUCLEAR POWER

Fukushima

Questions linger over fallout and clean-up in Japan **PAGE 139**



141 HEALTH

Congressional divisions threaten to delay institute for translational medicine

142 ASTRONOMY

Flickering starlight slows Kepler's hunt for exoplanets

145 PLANETARY SCIENCE

Researchers rally in support of neglected Venus

146 MEDICAL RESEARCH

Daniel Weinberger looks to the future of schizophrenia therapies

FEATURES

CLIMATOLOGY

Charged debate

Is there a link between climate change and extreme weather?

PAGE 140



150 BIODEFENCE

The price of protection

Ten years on and \$60 billion spent, the US foray into biodefence has not gone according to plan

COMMENT

153 DEFENCE

Homeland insecurity

Peter D Zimmerman

The Office of Homeland Security was just too unwieldy to succeed



POLICY

US science faces crunch

Jay Gullledge argues that in these tough times US science needs to stress its value to society **PAGE 155**

BOOKS & ARTS

158 HIGHER EDUCATION

Academic questions

David Helfand

159 BOOKS IN BRIEF

160 EVOLUTION

Small-town utopia

Kevin Laland



161 Q&A

Mr Sustainability

John Robinson knows what it takes to make a university campus green

CORRESPONDENCE

162 Costing research / Sustainability in China / Alternative antibiotics / Heart disease and gut flora

FUTURES

244 NPG's policy on authorship

Jordan Suchow

CONTENTS

8 September 2011 / Vol 477 / Issue No 7363

RESEARCH

NEW ONLINE

163 Papers published this week at nature.com

NEWS & VIEWS

164 ASTROPHYSICS

Broad escape from the abyss

Close-up view of the jet launched from near a black hole

Alan P Marscher **SEE LETTER P.185**

165 NEUROSCIENCE

When lights take the circuits out

Analysis of discrete neuronal populations using a new optogenetic tool

João Peça and Guoping Feng

SEE ARTICLE P.171

166 METABOLISM

Let them eat fat

Autophagy in AgRP neurons and regulation of food intake

Scott M Sternson

168 GEOSCIENCE

Earth's patchy late veneer

Absence of the 'late veneer' from some parts of Earth's mantle

Thorsten Kleine **SEE LETTER P.195**

169 CANCER

Let sleeping DNA lie

Tumour-suppressive effects of BRCA1 through heterochromatin silencing

Ashok R Venkitaraman **SEE ARTICLE P.179**

ARTICLES

171 NEUROSCIENCE Neocortical excitation/

inhibition balance in information processing and social dysfunction

O Yizhar et al. **SEE N&V P.165**

179 CANCER BRCA1 tumour suppression

occurs via heterochromatin-mediated silencing

Q Zhu et al. **SEE N&V P.169**

LETTERS

185 ASTRONOMY An origin of the radio jet

in M87 at the location of the central black hole

K Hada et al. **SEE N&V P.164**

188 ASTRONOMY Three classical Cepheid

variable stars in the nuclear bulge of the Milky Way

N Matsunaga et al.



ON THE COVER

A good copy

The *Heliconius numata* butterfly (top) mimics *Melinaea mneme* (bottom) and related species using a supergene to select from an impressive array of wing pattern options. **PAGE 203**

191 PHYSICS Magnetic-field-induced charge-stripe order in the high-temperature superconductor $\text{YBa}_2\text{Cu}_3\text{O}_x$

T Wu et al.

195 EARTH SCIENCE The tungsten isotopic composition of the Earth's mantle before the terminal bombardment

M Willbold, T Elliott & S Moorbath

SEE N&V P.168

199 ECOLOGY High plant diversity is needed to maintain ecosystem services

F Isbell et al.

203 MOLECULAR EVOLUTION Chromosomal rearrangements maintain a polymorphic supergene controlling butterfly mimicry

M Joron et al.

207 GENOMICS The genome sequence of Atlantic cod reveals a unique immune system

B Star et al.

211 NEURODEGENERATION Mutations in *UBQLN2* cause dominant X-linked juvenile and adult-onset ALS and ALS/dementia

H-X Deng et al.

216 IMMUNOLOGY Different patterns of peripheral migration by memory CD4^+ and CD8^+ T cells

T Gebhardt et al.

220 IMMUNOLOGY Continued clearance of apoptotic cells critically depends on the phagocyte Ucp2 protein

D Park et al.

225 CANCER Haem oxygenase is synthetically lethal with the tumour suppressor fumarate hydratase

C Frezza et al.

229 IMMUNOLOGY TSLP promotes interleukin-3-independent basophil haematopoiesis and type 2 inflammation

M C Siracusa et al.

234 STRUCTURAL BIOLOGY N_2O binding at a $[\text{4Cu:2S}]$ copper-sulphur cluster in nitrous oxide reductase

A Pomowski, W G Zurnft, P M H Kroneck & O Einsle

238 CORRIGENDUM Tumour vascularization via endothelial differentiation of glioblastoma stem-like cells

L Ricci-Vitiani et al.

238 ERRATUM DMRT1 prevents female reprogramming in the postnatal mammalian testis

C K Matson et al.

CANCER

BRCA1

A previously unknown function for the common tumour suppressor. **PAGE 179**

