CONTENTS

19/26 December 2013 / Vol 504 / Issue No 7480



THIS WEEK

EDITORIALS

331 ITALY

Stem-cell fiasco must be stopped

The uncertainty over unproven stem-cell therapy cannot be allowed to continue

331 ENVIRONMENT

Sink or swim?

Monitoring of land-use change needs to improve

332 SCIENCE FICTION

Futures redux

Can you tell a tale in just 200 characters?

WORLD VIEW

333 Academics should not remain silent on hacking

Charles Arthur

That spy agencies have undermined encryption code is cause for alarm

RESEARCH HIGHLIGHTS

334 SELECTIONS FROM THE

SCIENTIFIC LITERATURE

Chameleons show their colours / Wearable batteries / Bench-top volcano

SEVEN DAYS

336 THE NEWS IN BRIEF

China's rover reaches Moon / US strikes budget deal / Israel joins CERN

NEWS IN FOCUS

339 EMISSIONS

Carbon-storage plan faces problems

341 FISHERIES

European stance on deep-sea trawling makes waves

342 ENVIRONMENT

What to do with Russia's fallow cropland

343 FUNDING

US universities struggle with overheads

CAREERS

471 HIGHER EDUCATION

On the lookout for true grit

Minorities can face a tough time doing a PhD but there is help at hand

473 CAREER BRIEFS



nature events

Your guide to global scientific events and courses in 2014

COMMENT

367 PARTICLE PHYSICS

Together to the next frontier

Nigel Lockyer

The future of large-scale physics

369 CONSERVATION

The Endangered Species Act at 40

Noah Greenwald; Amy W Ando; Stuart H M Butchart; John Tschirhart

Opinions on the landmark US law

BOOKS & ARTS

372 CHEMISTRY

A festive ferment

Harold McGee

374 EDUCATION

Fairylands of science

Melanie Keene

CORRESPONDENCE

376 Advice for policy-makers / Standards in life sciences / The trouble with fructose

OBITUARY

377 Adrienne Asch (1946-2013)

Dorothy Roberts

FUTURES

476 A soon and distant Christmas

Nathan Insel

CONTENTS

19/26 December 2013 / Vol 504 / Issue No 7480

Biology

RESEARCH

NEW ONLINE

379 Papers published this week at nature.com

NEWS & VIEWS

380 EARTH SCIENCE

Erosion by cooling

Climate cooling speeds up mountain erosion David Lundbek Egholm

SEE LETTER P.423

381 CANCER

Discrepancies in drug sensitivity

Low concordance between assays in large cell-line studies

John N Weinstein & Philip L Lorenzi
SEE ANALYSIS P.389

383 SPACE PHYSICS

A fast lane in the magnetosphere

Chorus waves accelerate electrons in the magnetosphere Mary K Hudson SEE LETTER P.411

384 PLANT BIOLOGY

Witchcraft and destruction

Strigolactone-dependent degradation of the rice protein DWARF53
Steven M Smith
SEE ARTICLES P.401 & P.406

386 EDITORS' CHOICE

The News & Views highlights of 2013

ANALYSIS

CANCER Inconsistency in large pharmacogenomic studies

B Haibe-Kains et al. SEE N&V P.381

ARTICLES

- 394 NEUROSCIENCE Astrocytes mediate synapse elimination through MEGF10 and MERTK pathways W-S Chung et al.
- 401 PLANT SCIENCES DWARF 53 acts as a repressor of strigolactone signalling in rice
 L Jiang et al. SEE N&V P.384
- 406 PLANT SCIENCES D14–SCF^{D3}-dependent degradation of D53 regulates strigolactone signalling F Zhou et al. SEE N&V P.384

LETTERS

411 MAGNETOSPHERIC PHYSICS Rapid local acceleration of relativistic

NEUROSCIENCE

Starring role

Astrocyte-mediated elimination of synapses is active in disease process, learning and memory. PAGE 394



radiation-belt electrons by magnetospheric chorus R M Thome et al. SEE N&V P. 383

- 415 QUANTUM INFORMATION Dissipative production of a maximally entangled steady state of two quantum bits Y Lin et al.
- 419 QUANTUM INFORMATION Autonomously stabilized entanglement between two superconducting quantum bits S Shankar et al.
- 423 PALAEOCLIMATE Worldwide
 acceleration of mountain erosion
 under a cooling climate
 F Herman et al. SEE N&V P.380
- 427 NEUROSCIENCE Attention to eyes is present but in decline in 2–6-month-old infants later diagnosed with autism W Jones & A Klin
 - 432 CLINICAL GENETICS Dysfunctional nitric oxide signalling increases risk of myocardial infarction J Erdmann et al.
- 437 DRUG DISCOVERY Antidiabetic effects of glucokinase regulatory protein small-molecule disruptors DJ Lloyd et al.
 - 441 ADAPTIVE IMMUNITY Themis sets the signal threshold for positive and

negative selection in T-cell development *G Fu* et al.

- 446 MUCOSAL IMMUNOLOGY Commensal microbe-derived butyrate induces the differentiation of colonic regulatory T cells Y Furusawa et al.
- 451 MUCOSAL IMMUNOLOGY Metabolites produced by commensal bacteria promote peripheral regulatory T-cell generation N Arpaia et al.
- 456 DEVELOPMENTAL BIOLOGY The heterotaxy gene GALNT11 glycosylates Notch to orchestrate cilia type and laterality MT Boskovski et al.
- 460 EPIGENETICS Role of Tet1 in erasure of genomic imprinting
 S Yamaguchi, L Shen, Y Liu, D Sendler & Y Zhang
- 465 STRUCTURAL BIOLOGY High-resolution Xist binding maps reveal two-step spreading during X-chromosome inactivation MD Simpn et al.
- 470 RETRACTION Dance reveals symmetry especially in young men WM Brown et al.
- 470 CORRIGENDUM Membrane potential dynamics of grid cells C Domnisoru, A A Kinkhabwala & D W Tank

NEUROSCIENCE

Eye spy

Early avoidance of eye contact is an one of the first signs of an autism spectrum disorder. PAGE 427







