

CONTENTSION

15 January 2015 / Vol 517 / Issue No 7534

THIS WEEK

EDITORIALS

243 SOCIETY

Science and satire

The terror attacks in Paris reinforce the importance of combatting obscurantism

244 MARINE SCIENCE

Deep mysteries

Trawling the sea for data is expensive but worthwhile

244 GENOMICS

Out of the bag

Sequencing finally brokers peace between dogs and cats

WORLD VIEW

245 The focus on bibliometrics makes papers less useful

Reinhard Werner

Citations are not the best way to judge research or potential hires

RESEARCH HIGHLIGHTS

246 SELECTIONS FROM THE SCIENTIFIC LITERATURE



Gut microbe's in-built resistance / Arsenic semiconductor / A monkey reflects / Funding transparency / Early lungs / Shaping silicon / Maize ancestry

SEVEN DAYS

248 THE NEWS IN BRIEF

SpaceX rocket flunks landing / Extinct secrets of Madagascan ossuary / Ebola vaccine trials set to start in Africa / Japan gives ¥3 trillion boost to economy / Clean energy attracts investment

CAREERS

401 WORK-LIFE BALANCE

Lab life with kids

Time management is key to combining parenthood with work — but so is support from your employers

403 CAREER BRIEFS

NEWS IN FOCUS

251 ENVIRONMENT

Government appointments spark environmental fears in Brazil



252 GENOMICS Cat genome makes purr-fect complement to dog sequences

253 HEALTH Drugs that mimic complex biologics set to gain approval in US

254 MICROSCOPY Inflated brains offer detailed view of tissue

255 ENVIRONMENT Tropical island to become digital ecology lab

256 SPACE

Al Gore-endorsed satellite breaks free of mothballs to monitor space weather

FEATURES



AGRICULTURE

State-ofthe-art soil

Charcoal-rich biochar is proving to be a growth industry, literally PAGE 258

262 MICROBIOLOGY

Here's looking at you, squid

Margaret McFall-Ngai has unpicked a cephalopod's relationship with its live-in bacteria

COMMENT



CLIMATE CHANGE

Plan to move

David López-Carr &
Jessica Marter-Kenyon
We need a global strategy to manage
the relocation of human populations
to cope with global warming PAGE 265

BOOKS & ARTS

268 SCIENCE POLICY

From Brookhaven to Bush

Peter Gluckman

269 HISTORY OF CHEMISTRY

Words into gold Philip Ball



CORRESPONDENCE

271 Galapagos tortoises recovering / Save Italy's museum collections / Mentoring in the developing world / IPBES policy on conflicts of interest

OBITUARY

272 Alexander Grothendieck (1928–2014)

David Mumford & John Tate



FUTURES 406 The left hands of lovers Emily Eckart



CONTENTS

15 January 2015 / Vol 517 / Issue No 7534

RESEARCH

NEW ONLINE

273 Papers published this week at nature.com

NEWS & VIEWS

274 BIOMECHANICS

Boxed up and ready to go Boxfish body shape amplifies

destabilizing forces and manoeuvrability Stacy C Farina & Adam P Summers

275 EARTH SCIENCE

Mixing it up in the mantle

Tracking the development of chemical heterogeneity in the mantle Jon Woodhead SEE LETTER P.356

276 GENOMICS

African dawn

Genotype and whole-genome data from 18 sub-Saharan ethnolinguistic groups Raj Ramesar SEE ARTICLE P.327

277 PHYSICAL CHEMISTRY

Hydrophobic interactions in context Immobilized cations dramatically affect hydrophobic interactions Shekhar Garde SEE LETTER P.347

279 NEUROSCIENCE

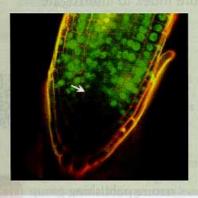
Dragonflies predict and plan their hunts

An invertebrate uses internal models of movement when catching prey Stacey A Combes SEE ARTICLE P.333

PLANT SCIENCES

Root planner

Transcriptional regulators point to mechanisms behind the evolution of stem cell regulation in plants. PAGE 377





280 ORGANIC CHEMISTRY

One catalyst, two reactions

Copper-catalysed selective hydroamination reactions of alkynes Emmanuelle Schulz

internal model in action. PAGES 279 & 333

281 HIV

Seeking ultimate victory

Escape mutants dominate the latent viral reservoir in patients with HIV Louis J Picker & Jeffrey D Lifson SEE LETTER P.381

ARTICLES

327 GENETICS The African Genome **Variation Project shapes** medical genetics in Africa D Gurdasani et al. SEE N&V P.276

333 NEUROSCIENCE Internal models direct dragonfly interception steering M Mischiati et al. SEE N&V P.279

LETTERS

339 PLANETARY SCIENCE Impact jetting as the origin of chondrules BC Johnson, D.A. Minton, H.J. Melosh & MT Zuber

342 ATOMIC PHYSICS Direct observation of

electron propagation and dielectric screening on the atomic length scale S Neppl et al.

347 MATERIALS CHEMISTRY Modulation of hydrophobic interactions by proximally immobilized ions C D Ma, C Wang, C Acevedo-Vélez, S H Gellman & N L Abbott SEE N&V P.277

351 ORGANIC CHEMISTRY Non-stabilized nucleophiles in Cu-catalysed dynamic kinetic asymmetric allylic alkylation H You, E Rideau, M Sidera & S P Fletcher

356 GEOCHEMISTRY The terrestrial uranium isotope cycle

M B Andersen et al. SEE N&V P.275

360 BIOTECHNOLOGY Promoterless gene targeting without nucleases ameliorates haemophilia B in mice A Barzel et al.

365 PLANT SCIENCES Productivity limits and potentials of the principles of conservation agriculture C M Pittelkow et al.

369 EVOLUTION Long-term phenotypic evolution of bacteria G Plata, C S Henry & D Vitkup

373 NEUROSCIENCE The neural representation of taste quality at the periphery R P J Barretto et al.

377 PLANT SCIENCES Control of plant stem cell function by conserved interacting transcriptional regulators Y Zhou et al.

381 IMMUNOLOGY Broad CTL response is required to clear latent HIV-1 due to dominance of escape mutations K Deng et al. SEE N&V P.281

386 IMMUNOLOGY CEACAM1 regulates TIM-3-mediated tolerance and exhaustion Y-H Huang et al.

391 STRUCTURAL BIOLOGY An ERK/Cdk5 axis controls the diabetogenic actions of PPARy

A S Banks et al.

396 STRUCTURAL BIOLOGY Subnanometreresolution electron cryomicroscopy structure of a heterodimeric ABC exporter JM Kim et al.