CONTENTS

6 JANUARY 2017 • VOLUME 355 • ISSUE 6320

NEWS

IN BRIEF
10 News at a glance

IN DEPTH
12 SMALL GULF NATION AIMS FOR BIG SPLASH ON MARS
UAE mission to Red Planet in 2020 would probe mysteries of martian atmosphere By S. El-Showk

13 GERMANY TO PROBE NAZI-ERA MEDICAL SCIENCE
Overlooked brain tissue slides prompt another look at “euthanasia” victims By M. Gannon
> PODCAST

14 FOSSIL LEAVES BEAR WITNESS TO ANCIENT CARBON DIOXIDE LEVELS
Relics warn that climate may be more sensitive to atmospheric CO₂ than models predict By E. Hand

16 SCIENTISTS FEAR PENDING ATTACK ON FEDERAL STATISTICS COLLECTION
Census Bureau and its programs could be in the crosshairs of the Trump administration and Congress By J. Mervis

17 GERMAN RESEARCHERS START 2017 WITHOUT ELSEVIER JOURNALS
More than 60 institutions lose online subscriptions after negotiations over price and open access stall By G. Vogel

FEATURE

18 THE BURNING QUESTION
Moves to designate wood as a carbon-neutral fuel have alarmed environmentalists and divided scientists By W. Cornwall

INSIGHTS

LETTERS
22 NEXTGEN VOICES: PREJUDGMENT CALL

PERSPECTIVES
24 STAYING CONDUCTIVE IN THE STRETCH
A nanoconfined polymer retained its conductivity even when highly strained By S. Napolitano
> REPORT P. 59

25 PERCEPTION DRIVES THE EVOLUTION OF OBSERVABLE TRAITS
Bats choose flowers on the basis of nectar volume and concentration, affecting how the flowers evolve By H. Farris
> REPORT P. 75

26 THE FRAGILITY OF Distant Cooper Pairs
The discovery of superconductivity in bismuth is a challenge to standard theory By K. Behnia
> REPORT P. 52

28 A CONUNDRUM FOR DENSITY FUNCTIONAL THEORY
DFT studies may sometimes get the right results for the wrong reasons By S. Hammes-Schiffer
> REPORT P. 49

29 REPROGRAMMING TO RESIST
Prostate cancer cells alter identity to resist therapy By K. Kelly and S. P. Balk
> REPORTS PP. 78 & 84

POLICY FORUM
31 A PLAN FOR U.K. SCIENCE AFTER THE EUROPEAN UNION REFERENDUM
Funding, regulation, immigration, and investment should be points of focus By M. Galsworthy and M. McKee

BOOKS ET AL.
33 MYSTERIES OF THE MUNDANE
A physicist reveals the science behind familiar phenomena By M. Engel

34 INSIDE CUBA
An immersive exhibition introduces visitors to the country’s rich culture and biodiversity By A. Rademacher

DEPARTMENTS
9 EDITORIAL
A family analysis
By Jeremy Berg

102 WORKING LIFE
Paper writing gone Hollywood
By Jeffrey J. McDonnell

Science Staff ..................................................8
New Products...............................................96
Science Careers...........................................97

Published by AAAS
RESEARCH

IN BRIEF
35 From Science and other journals

REVIEW
38 BIOENGINEERING
Industrial biom manufacturing: The future of chemical production J. M. Clomburg et al.
REVIEW SUMMARY: FOR FULL TEXT: dx.doi.org/10.1126/science.aag0804

RESEARCH ARTICLES
39 NONCODING RNA
CRISPRi-based genome-scale identification of functional long noncoding RNA loci in human cells S. J. Liu et al.
RESEARCH ARTICLE SUMMARY: FOR FULL TEXT: dx.doi.org/10.1126/science.aah7111

40 CELL DIVISION
A global view of meiotic double-strand break end resection E. P. Mimitou et al.

REPORTS
45 VOLCANOLOGY
Volcanic tremor and plume height hysteresis from Pavlov Volcano, Alaska D. Fee et al.

49 THEORETICAL CHEMISTRY
Density functional theory is straying from the path toward the exact functional M. G. Medvedev et al.
► PERSPECTIVE P. 28

52 SUPERCONDUCTIVITY
Evidence for bulk superconductivity in pure bismuth single crystals at ambient pressure O. Prakash et al.
► PERSPECTIVE P. 26

55 PLANETARY SCIENCE
Extensive water ice within Ceres’ aqueously altered regolith: Evidence from nuclear spectroscopy T. H. Prettyman et al.

59 FLEXIBLE ELECTRONICS
Highly stretchable polymer semiconductor films through the nanoconfinement effect J. Xu et al.
► PERSPECTIVE P. 24

64 ARCHAEOLOGY
Permanent human occupation of the central Tibetan Plateau in the early Holocene M. C. Meyer et al.

68 BRAIN DEVELOPMENT
Microstructural proliferation in human cortex is coupled with the development of face processing J. Gomez et al.

71 PLANT EVOLUTION
Eocene lantern fruits from Gondwanan Patagonia and the early origins of Solanaceae P. Wilf et al.
► VIDEO

75 EVOLUTIONARY BIOLOGY
Cognition-mediated evolution of low-quality floral nectars V. Nachev et al.
► PERSPECTIVE P. 25

CANCER THERAPY
78 RB1 and Trp53 cooperate to suppress prostate cancer lineage plasticity, metastasis, and antiandrogen resistance S. Y. Ku et al.

84 SOX2 promotes lineage plasticity and antiandrogen resistance in TP53- and RB1-deficient prostate cancer P. Mu et al.
► PERSPECTIVE P. 29

STRUCTURAL BIOLOGY
89 Cryo-EM structures and atomic model of the HIV-1 strand transfer complex intasome D. O. Passos et al.

93 A supramolecular assembly mediates lentiviral DNA integration A. Ballandras-Colas et al.

ON THE COVER
The 3960-megawatt Drax power station, the largest in the United Kingdom, is expected to burn 7.5 million metric tons of biomass in 2017, mainly wood pellets from U.S. forests. Many countries classify wood as a carbon-neutral fuel and encourage its use to produce electricity. But any climate benefits may take decades to materialize. See page 18. Photo: © Michael Rothwell/Alamy Stock Photo