CONTENTS

30 May 2019 / Vol 569 / Issue No 7758

THIS WEEK

EDITORIALS

599 MICROBIOLOGY

Inside knowledge

Lessons from the second phase of the Human Microbiome Project

599 PHYSICS

In from the cold

A Google-funded project to investigate cold fusion kindles debate

600 PUBLISHING

Beyond retraction

Why *Nature* is republishing a retracted paper on Asia's glaciers

WORLD VIEW



601 Lessons from cold fusion, 30 years on

Philip Ball
The sociology of
revisiting longdiscredited claims for
cold fusion is at least
as instructive as the
science

RESEARCH HIGHLIGHTS

602 SELECTIONS FROM THE SCIENTIFIC LITERATURE

A ghostly galaxy / Buried clues to ocean volcanoes / Baby sharks snack on songbirds / Portable patch aids personal cooling / Ants rush to the



SEVEN DAYS

604 THE NEWS IN BRIEF

Scientists vote on new geological epoch / Pollution violations in China / PLOS to open up peer review / Science academies convene gene-editing panel

SPOTLIGHT

S33 AI IN CHINA

An artificial race for intelligence

Al researchers in China are keen to keep the field's global sharing culture alive

NEWS IN FOCUS

607 FACILITIES

World's largest laser lab is plagued by disputes

609 POLICY

Brazil's scientists launch science-advice project to fight back over funding cuts

610 ENVIRONMENT

How starting a forest fire in Utah could help to improve models of wildfire smoke

611 NUCLEAR PHYSICS

Google re-examines cold fusion but finds no evidence that it works

612 GENOMICS

Wellcome Sanger Institute announces closure of leading animal facility

FEATURES



RIG DATA

Surveillance science

Do efforts to track people's movements through mobile-phone records help to improve lives? **PAGE 614**

618 ECOLOGY

Hacking conservation

How one scientist is using tactics from the technology industry to help preserve biodiversity

SPOTLIGHT

\$37 NON-WESTERN SCIENCE

Biotechnologists breaking fresh ground

Five scientists in non-Western nations who are maximizing local resources

COMMENT



621 PUBLISHING

Rethink impact factors: find new ways to judge a journal

Paul Wouters et al.

Make metrics in science publishing broader and more transparent

623 MICROBIOLOGY

What's next for the human microbiome?

Lita Proctor

Dissect host–microbe interactions using approaches from ecology and evolution

BOOKS & ARTS

627 EVOLUTION

Moral bonds

Nicholas A Christakis

628 MATHEMATICS

The principles of uncertainty

Andrew Gelman

CORRESPONDENCE

629 BOOKS IN BRIEF

630 Two views on restoration of natural forests / Behavioural nudges for conservation / Is a germline-editing ban compatible with human rights?

FUTURES

746 In the spaces of strangers
LPLee



CAREERS

741 ENTREPRENEURSHIP

On the rebound

Failed start-ups can help entrepreneurs to learn from their mistakes

COVER IMAGE: AXS STUDIO

CONTENTS

30 May 2019 / Vol 569 / Issue No 7758

RESEARCH

NEW ONLINE

631 Papers published this week at nature.com

NEWS & VIEWS

632 MICROBIOLOGY

Tracking humans and microbes

The second phase of studies of the Human Microbiome Project Verónica Lloréns-Rico & Jeroen Raes

SEE PERSPECTIVE P.641 & ARTICLES P.655 & P.663

004 EVERDINGENTAL BUVCIOS

634 EXPERIMENTAL PHYSICS Quantum simulation of

black-hole radiation

An analogue black hole comprising a system of ultracold atoms

Silke Weinfurtner SEE LETTER P.688

635 CELL BIOLOGY

Guarding the gate for mitochondrial entry

Ubx2 protein tackles blockages hindering protein entry into mitochondria Sylvie Callegari & Peter Rehling

SEE ARTICLE P.679

637 CANCER

Brain cells invade prostate tumours

The source of newly formed nerve cells in prostate cancer has been found Simon T Schafer & Fred H Gage
SEE ARTICLE P.672

638 ELECTRONICS

A step forward for artificial touch systems

A glove that can generate large databases of detailed pressure maps *Giulia Pasquale* **SEE LETTER P.698**

PERSPECTIVE

641 MICROBIOLOGY The Integrative Human Microbiome Project

The Integrative HMP (iHMP) Research Network Consortium SEE N&V P.632

ARTICLES

- 649 CLIMATE SCIENCE Asia's shrinking glaciers protect large populations from drought stress H D Pritchard
- 655 MICROBIOLOGY Multi-omics of the gut microbial ecosystem in inflammatory bowel diseases J Lloyd-Price et al. SEE N&V P.632
- 663 MICROBIOLOGY Longitudinal



ON THE COVER

Inside story

The Integrative Human Microbiome Project concludes a ten-year initiative from the US National Institutes of Health exploring interactions between humans and the microorganisms living in their bodies. This issue presents results and analysis from the second phase of the project and an overview highlighting the insights gained into disease onset and progression. **PAGES 599, 623, 632, 641, 655 & 663**

multi-omics of host-microbe dynamics in prediabetes W Zhou et al. SEE N&V P.632

672 CANCER Progenitors from the central nervous system drive neurogenesis in cancer

P Mauffrey et al. SEE N&V P.637

679 CELL BIOLOGY Mitochondrial protein translocation-associated degradation C U Mårtensson et al. SEE N&V P.635

LETTERS

- 684 ASTRONOMY A massive white-dwarf merger product before final collapse V V Gvaramadze et al.
- 688 EXPERIMENTAL PHYSICS Observation of thermal Hawking radiation and its temperature in an analogue black hole

J R M de Nova, K Golubkov, V I Kolobov & J Steinhauer SEE N&V P.634

692 QUANTUM PHYSICS Cavity quantum electrodynamics with atom-like mirrors

M Mirhosseini et al.

- 698 ELECTRONICS Learning the signatures of the human grasp using a scalable tactile glove
 - S Sundaram et al. SEE N&V P.638
- 703 CHEMICAL SYNTHESIS Quaternarycentre-guided synthesis of complex polycyclic terpenes P Hu et al.
- 708 NEUROSCIENCE Sensory
 experience remodels genome
 architecture in neural circuit to
 drive motor learning
 T Yamada et al.
- 714 PLANT SCIENCES An apical hypoxic niche sets the pace of shoot meristem activity

 D A Weits et al.
- 718 IMMUNOLOGY A conserved PLPLRT/SD motif of STING mediates the recruitment and activation of TBK1

 B Zhao et al.
- 723 CANCER Proteomics reveals NNMT as a master metabolic regulator of cancer-associated fibroblasts M A Eckert et al.
- 729 DEVELOPMENTAL BIOLOGY Genomelamina interactions are established de novo in the early mouse embryo M Borsos et al.
- 734 MOLECULAR BIOLOGY Active chromatin marks drive spatial sequestration of heterochromatin in *C. elegans* nuclei *D S Cabianca* et al.

ELECTRONICS

Touch screen

A tactile-sensing glove can identify grasped objects. **PAGE 698**

