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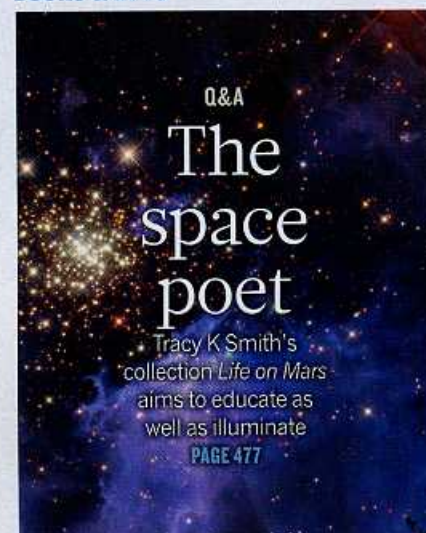
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NEW ONLINE

- 479 Papers published this week at nature.com

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- Probing the core's light elements**
Earth's liquid outer core may be poor in oxygen
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481 CANCER

- Final act of senescence**
Clearance of senescent cells by the immune system prevents cancer
Manuel Serrano [SEE LETTER P.547](#)

482 INTERFACIAL CHEMISTRY

- Gold's enigmatic surface**
Alkane polymerization on gold
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483 PALAEOANTHROPOLOGY

- The earliest modern humans in Europe**
Reanalysis of ancient human remains
Paul Mellars [SEE LETTERS P.521 & P.525](#)

485 PLANETARY SCIENCE

- Europa awakening**
Evidence that Jupiter's moon Europa is currently geologically active
Laszlo P Keszthelyi [SEE LETTER P.502](#)

ARTICLES

- 487 **GENOMICS** The genome of *Tetranychus urticae* reveals herbivorous pest adaptations
M Grbić et al.

- 493 **NEUROSCIENCE** Neuronal filtering of multiplexed odour representations
F Blumhagen et al.

LETTERS

- 499 **ASTRONOMY** The alignment of molecular cloud magnetic fields with the spiral arms in M33
H-b Li & T Henning

- 502 **PLANETARY SCIENCE** Active formation of 'chaos terrain' over shallow subsurface water on Europa
B E Schmidt, D D Blankenship, G W Patterson & P M Schenk [SEE N&V P.485](#)

- 506 **CHEMISTRY** Structural transformation in supercooled water controls the



ON THE COVER

Lake view

The cover illustrates the lake below Thera Macula on Jupiter's ice-bound moon Europa. Fractures, icebergs and matrix forming above this lens-shaped body of water, comparable in volume to North America's Great Lakes, may be shaping one of the 'regions of chaos' characteristic of Europa's surface. [PAGE 502](#)

- crystallization rate of ice
E B Moore & V Molinero

- 509 **CLIMATE SCIENCE** Reconstructed changes in Arctic sea ice over the past 1,450 years
C Kinnard et al.

- 513 **GEOPHYSICS** Evidence for an oxygen-depleted liquid outer core of the Earth
H Huang et al. [SEE N&V P.480](#)

- 517 **ECOLOGY** Changes in plant community composition lag behind climate warming in lowland forests
R Bertrand et al.

- 521 **PALAEOANTHROPOLOGY** The earliest evidence for anatomically modern humans in northwestern Europe
T Higham et al. [SEE N&V P.483](#)

- 525 **PALAEOANTHROPOLOGY** Early dispersal of modern humans in Europe and implications for Neanderthal behaviour
S Benazzi et al. [SEE N&V P.483](#)

- 529 **GENOMICS** *Ascaris suum* draft genome
A R Jex et al.

- 534 **GENOMICS** Somatic retrotransposition alters the genetic landscape of the human brain
J K Baillie et al.

- 538 **IMMUNOLOGY** Commensal microbiota and myelin autoantigen cooperate to trigger autoimmune demyelination
K Berer et al.

- 542 **IMMUNOLOGY** Dendritic cells control lymphocyte entry to lymph nodes through high endothelial venules
C Moussion & J-P Girard

- 547 **CANCER** Senescence surveillance of pre-malignant hepatocytes limits liver cancer development
T-W Kang et al. [SEE N&V P.481](#)

- 552 **CELL BIOLOGY** Membrane protein sequestering by ionic protein-lipid interactions
G van den Bogaart et al.

- 556 **CORRIGENDUM** Modelling schizophrenia using human induced pluripotent stem cells
K J Brennand et al.

- 556 **CORRIGENDUM** High-latitude controls of thermocline nutrients and low latitude biological productivity
J L Sarmiento, N Gruber, M A Brzezinski & J P Dunne

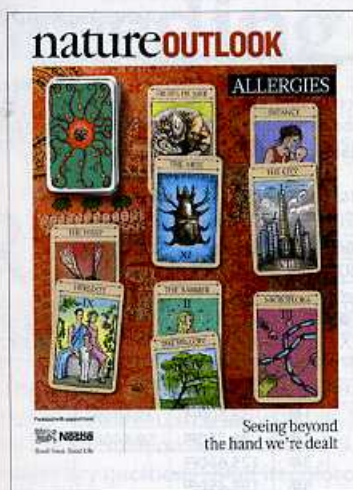
GENOMICS

Silk road

Nanotechnologists looking to design ultra-strong fibres will find the genetic recipe in the spider mite genome, now fully sequenced. [PAGE 487](#)



ALLERGIES



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S2 LIFESTYLE

When allergies go west

Modern living is somehow making immune systems overly sensitive. What's to blame?

S5 MICROBIOME

Gut reaction

Genetics, antibiotics and diet alter the profile of our resident bacteria, and our propensity to allergies

S8 FOOD

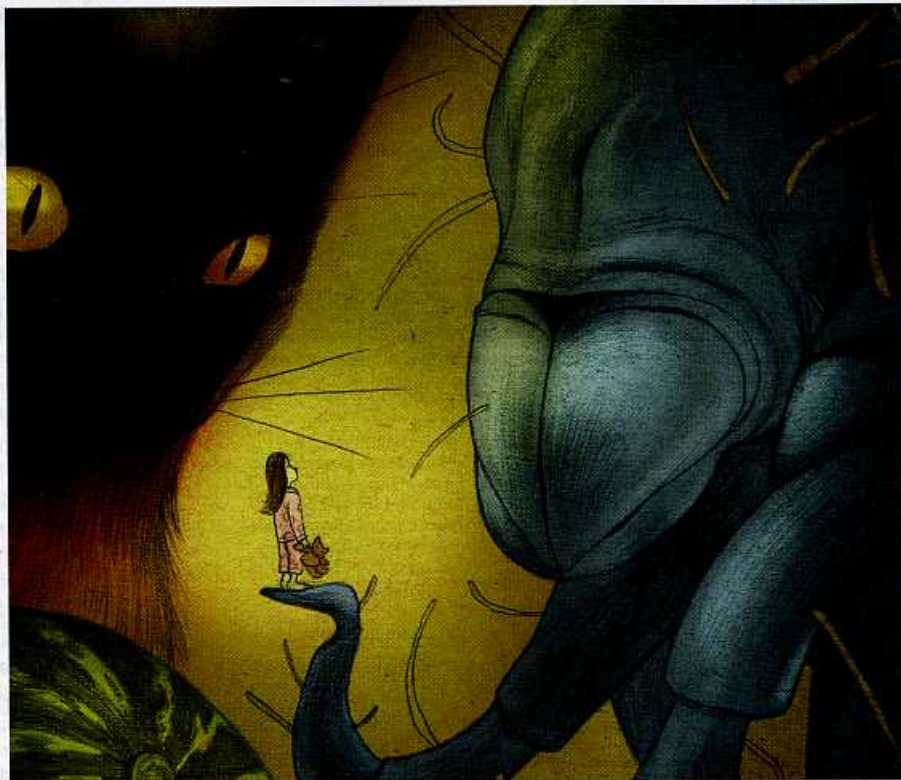
Picky eaters

When and how to expose at-risk children to certain foods is the subject of much debate

S10 GENETICS

Seeking a gene genie

Some people are more prone to allergies than others. What's DNA got to do with it?



Cat dander, innocuous foods and dust mites are the bane of some people's lives (page S14).

S12 SKIN

Into the breach

Overturning the dogma of how allergies start

S14 ATOPY

Marching with allergies

Living from one symptom to the next can be explained in cellular terms, which might point to new strategies

S16 PERSPECTIVE

Acting on the evidence

Time to reconsider how we define atopic eczema as we try to tame immunity, says Hywel Williams

S17 TREATMENT

In search of a booster shot

Focusing on preventing allergies, rather than soothing a symptom

S20 ASTHMA

Breathing new life into research

Realizing the complexity of the condition should help drug developers get to the root of the problem

S22 PERSPECTIVE

A human touch

The use of animal models has confused allergists and misdirected efforts, contends Stephen Holgate



LATEST RESEARCH

- What are geneticists telling us about allergies?
go.nature.com/e5keru
- Allergists look at new strategies to treat allergies:
go.nature.com/das6s9

COLLECTION

- Visit our online edition of *Nature Outlook Allergies*, which includes an exclusive collection of the latest research and opinion
go.nature.com/9badje