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Lost Land of the Dodo A. Cheke and J. Hume, reviewed by S. L. Olson
On Deep History and the Brain D. L. Smail, reviewed by A. A. Ghazanfar

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Research Alone Is Not Enough L. M. Branscomb

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COMPUTER SCIENCE
reCAPTCHA: Human-Based Character Recognition via Web Security Measures
L. von Ahn, B. Maurer, C. McMillen, D. Abraham, M. Blum
A security system that relies on the superior performance of humans in comparison to computers in reading distorted text can be harnessed for digitized scanned documents.
10.1126/science.1160379

MATERIALS SCIENCE
Polymer Pen Lithography
F. Huo et al.
An array that can support millions of thin, flexible polymer pens can be used to deposit tiny molecular ink dots of variable size over large areas.
10.1126/science.1162193

PHYSICS
Transient Electronic Structure and Melting of a Charge Density Wave in TbTe$_3$
F. Schmitt et al.
Photoemission spectroscopy is extended to reveal the dynamics of correlated electronic phase transitions, showing how ordered electrons “melt” upon heating of TbTe$_3$.
10.1126/science.1160778

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W. Deng, J. Guo, J. Hu, H. Zhang
full text at www.sciencemag.org/cgi/content/full/321/5891/912c
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Optical Negative Refraction in Bulk Metamaterials
J. Yao et al.
An array of silver nanowires placed in a porous alumina matrix forms a three-dimensional material that negatively refracts visible light.
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Tail Reconnection Triggering Substorm Onset
V. Angelopoulos et al.
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Density Multiplication and Improved Lithography by Directed Block Copolymer Assembly
R. Ruiz et al.
An appropriate substrate pattern can direct an even finer pattern of a block copolymer, improving the resolution for lithography by a factor of four, beyond the usual limits.
>> Perspective p. 919

MATERIALS SCIENCE
Graphoepitaxy of Self-Assembled Block Copolymers on Two-Dimensional Periodic Patterned Templates
I. Bita et al.
A substrate patterned with a sparse array of nanoscale posts can direct the self-assembly of block copolymers to create a finely ordered lithographic array, even over a large area.
>> Perspective p. 919
Mounts a microRNA-mediated response that allows other infections.

L. Navarro, F. Jay, K. Nomura, S. Y. He, O. Voinnet

Effector Proteins

MOLECULAR BIOLOGY

Suppression of the MicroRNA Pathway by Bacterial Effector Proteins

L. Navarro, F. Jay, K. Nomura, S. Y. He, O. Voinnet

Upon bacterial infection, Arabidopsis mounts a microRNA-mediated innate immune defense, which is inhibited by proteins of the bacteria, allowing other infections.

MICROBIOLOGY

Arsenic(Ill) Fuels Anoxygenic Photosynthesis in Hot Spring Biofilms from Mono Lake, California

T. R. Kulp et al.

A primitive form of photosynthesis in which arsenic is the electron donor occurs in purple bacteria in a California lake, perhaps a relic of early life forms.

IMMUNOLOGY

In Vivo Imaging Reveals an Essential Role for Neutrophils in Leishmaniasis Transmitted by Sand Flies

N. C. Peters et al.

Visualization of the area around a bite from a parasite-infected sand fly shows that the first immune cells to arrive engulf and unexpectedly protect the invading parasite.

MEDICINE

Tumor Regression in Cancer Patients by Very Low Doses of a T Cell–Engaging Antibody

R. Bargou et al.

Tested in a small group of patients, a therapeutic antibody binds to both tumor cells and immune cells, increasing the local concentration and effectiveness of the immune cells.

NEUROSCIENCE

The Contribution of Single Synapses to Sensory Representation in Vivo

A. Arenz, R. A. Silver, A. T. Schaef er, T. W. Margrie

Only 100 synapses are required to accurately code for the animals’ velocity in the mouse cerebellum; the charge transfer into neurons is linearly related to acceleration.

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NADP-binding produces an asymmetric dimer.

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Threading Light Through the Opaque
Experiment confirms that light can be passed through disordered materials.

They Smell Like Twins
Sweaty study reveals that genetics determines body odor.

NADP-binding produces an asymmetric dimer.

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PERSPECTIVE: Dinucleotide-Sensing Proteins—Linking Signaling Networks and Regulating Transcription
H. K. Lamb, D. K. Stammers, A. R. Hawkins
Proteins that bind NAD(H) or NADP(H) may couple cellular redox state to transcription or other signaling pathways.

PERSPECTIVE: Great Times for Small Molecules—c-di-AMP, a Second Messenger Candidate in Bacteria and Archaea
U. Römling
The bacterial checkpoint protein DisA has diadenylate cyclase activity, suggesting that c-di-cAMP acts as a second messenger.

The basics of peer review.

SCIENCE CAREERS
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Learning the Ropes of Peer Reviewing
E. Pain
Peer review demands a blend of critical skills, honesty, and empathy.

If at First You Don’t Succeed, Cool Off, Revise, and Submit Again
L. Laursen
Rejection can be a constructive part of the publication process, really.

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